Interim Technical Memorandum

Geophysical and Soil Vapor Surveys RCRA Facility Investigation

GE Aircraft Engines
General Electric Company
Evendale, Ohio

March 1992

O'BRIEN & GERE

4603.004

INTERIM TECHNICAL MEMORANDUM
GEOPHYSICAL AND SOIL VAPOR SURVEYS

GENERAL ELECTRIC CORPORATION

AIRCRAFT ENGINES

EVENDALE, OHIO

MARCH 1992

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April 13, 1992

Mr. Dan Patulski
US Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

Re: GE Aircraft Engines
Interim Technical Memorandum
Geophysical and Soil Vapor Surveys
RFI

Dear Mr. Patulski,

Enclosed please find the above referenced report prepared by GE's contractor O'Brien & Gere. The report was prepared to summarize some of the RFI work completed to date. Please call me with any questions you may have. I can be reached on (513) 243-6272.

Sincerely,

Thomas M. Sauer, Sr. Environmental Engineer
Environmental Engineering Programs

cc: Mr. D. Combs, OEPA
Mr. W. Killoran, GE (w/o attach)
Mr. M. Norman, VSSP
Mr. T. Woodward, OBG (w/o attach)

3.4-04
C: rcra.4

Introduction

This Interim Technical Memorandum summarizes methods and results of geophysical and soil vapor surveys conducted in and around the General Electric facility in Evendale, Ohio. These field activities were performed in accordance with the approved August 1991 RCRA Facility Investigation - Work Plan and completed during the weeks of October 28 through November 15, 1991.

The objective of the geophysical surveys was to evaluate the extent of fill in four specific areas of interest. The objective of the soil vapor survey was to evaluate the areal distribution of subsurface volatile organic compounds (VOCs) at nine specific areas of interest.

Geophysical survey locations included: 1) the former north landfarm; 2) the former 508 basins in the scrap yard area; 3) the trash pile area; and the Reading Road construction debris area. Soil vapor survey areas included: 1) the drum storage area northeast of Building 306; 2) the east landfarm; 3) the north landfarm; 4) the Reading Road construction debris area; 5) the scrap yard; 6) the trash pile area; 7) the loading dock area between Buildings 700 and 800; 8) the storage tank area north of Building 700; and 9) the waste drum accumulation area near former Building 705. The location of each of these areas are shown on Figure 1.

The methods and results used to complete the geophysical and soil gas surveys are presented in Sections 1 and 2, respectively. The data obtained from these surveys were used to select locations for soil borings as described in Section 3.

SECTION 1 - GEOPHYSICAL SURVEYS

Methods

The geophysical methods included electromagnetic (EM) terrain conductivity and electrical resistivity sounding surveys. The EM surveys, which measure apparent soil conductivity in millimhos/meter (mmhos/m), were performed to evaluate the horizontal extent of fill materials. Resistivity soundings were used to evaluate the approximate thicknesses of the fill materials.

Prior to initiating the geophysical work efforts, a surveyed grid was established at each of the four areas of interest by Savage Walker and Associates, Inc. of Cincinnati, Ohio. The grid spacing at each area varied based on areal extent. EM survey data were collected at grid node locations. The locations and number of resistivity soundings for each area of interest were selected based on the results of the EM surveys and specific site conditions.

The EM surveys were accomplished using a Geonics EM-31 terrain conductivity meter. The EM-31 was operated in both the quadrature and in-phase modes to assess ground conductivity related to the disposal of waste materials or fill and to detect buried metals waste, respectively. The EM-31 quadrature phase (soil conductivity) data values were collected at individual grid nodes. Data were collected by first aligning the EM-31 receiver along an arbitrary north-south direction, with the value noted. The receiver was then directed along an east-west line to evaluate whether lateral changes in conductivity were occurring. These data are summarized on Tables 1, 2, 3, and 4, for the north landfarm, the trash pile area, the former 508 basins in the scrap yard area, and Reading Road construction debris areas, respectively.

The north-south data values were plotted on an area map and contoured. These maps, prepared for the north landfarm, the trash pile area, the former 508 basins in the scrap yard area, and Reading Road construction debris areas, are included as Figures 2, 3, 4, and 5, respectively. EM-31 in-phase (metal detection) mode data, representing likely areas containing subsurface metallic materials, are outlined with cross hatched markings on these figures.

Electrical resistivity soundings were performed using a Bison Model 2390 Signal Enhancement Earth Resistivity System and Slumberger electrode configuration. The locations and lengths of the soundings completed at each area of interest are illustrated on the respective figures. It should be noted that resistivity surveying was not completed in the former 508 basins (scrap yard area) (Figure 1) due to hardened surface soil conditions which prevented adequate penetration and coupling of electrodes in the underlying soils. Data generated from the field resistivity surveys were entered into a commercially available computer software model called RESIX developed by Interpex Limited of Golden, Colorado. Modeling results which present apparent subsurface resistivity layers and thicknesses are included as Appendix A.

Results

Former North Landfarm Area

The former north landfarm area is located in the northwest corner of the GE facility (Figure 1). The area is large and grass covered with brush bordering on the north and west, a chain-link fence on the south, and a road on the east. This area was formerly used to landfarm solid residue from

non-process oil/water separators and facility drainage systems which may have contained carbon particles, organic hydrocarbons, and metal associated with oils and jet fuel.

Prior to initiating the geophysical surveys, a regular grid was established encompassing the area of interest. Grid nodes were spaced at 100 foot intervals resulting in 53 data points. EM conductivity data were collected at each grid node and contoured as illustrated on Figure 2.

Review of Figure 2 indicates that there is little contrast in apparent soil conductivity values across the site. In general, conductivity values across the site ranged from 20 to 40 mmhos/m. Three anomalous values of 11 mmhos/m, 48 mmhos/m, and 70 mmhos/m were recorded at grid nodes B7, B4, and B1, respectively. EM readings collected in the in-phase operational mode indicated the presence of subsurface metal at grid node B1. These readings are likely influenced by subsurface utilities in this area. Further review of the in phase data on Figure 2 indicates that discrete quantities of subsurface metals are present over most of the site.

Ten electrical resistivity lines were run in the former north landfarm area, with six lines running north-south, and four lines running east-west as shown on Figure 2. Results of the geophysical modeling of these data indicate a relatively thin layer (less than 10 feet) of lower resistivity soils (generally less than 500 ohm-ft) are present at the surface. The lower resistivity of these soils may be the result of mixing more conductive materials (e.g. lime) with the natural materials during the landfarming process. A zone of higher resistivity soils (generally greater than 500 ohm-ft) underlies the lower resistivity layer, and likely represents the shallow natural sandy silts and clays found across the site.

Trash Pile Area

The trash pile area is located in the southeast portion of the GE facility (Figure 1). This area was allegedly used to dispose of construction debris and other miscellaneous materials. Prior to initiating the geophysical surveys a grid with 25-foot spacings was established and a total of 74 data points obtained. EM conductivity data were collected at each grid node and contoured, as illustrated on Figure 3. A review of Figure 3 indicates conductivity values ranged from 50 mmhos/m to greater than 400 mmhos/m and delineate a conductivity "mound" with the highest values in the center. The higher conductivity values located along the access road (Figure 3) may indicate the presence of more conductive debris (i.e. concrete with reinforcing steel) or an increased thickness of materials deposited at this location. In-phase EM-31 data values indicate that metallic materials, most likely construction debris, are pervasive throughout the site area.

Three electrical resistivity soundings were performed around the periphery of the trash pile, in areas amenable to surveying. The locations of these soundings are shown on Figure 3. Due to high tension power lines situated over the site and the nature of the hard fill materials, the depth of penetration was limited to the near surface layer. Review of this data, however, indicates that a higher resistivity layer exists from approximately 4 to 7 feet below the ground surface. This layer likely represents the previously described lower conductivity fill materials. The most resistive layer was detected at sounding TPA-RS1 which correlates with lower conductivity contours shown on Figure 3.

Former 508 Basins (Scrap Yard Area)

The former 508 basins near the scrap yard area are located in the northeast portion of the GE facility. Previous use of this area included two small basins which were alleged to have received solid and liquid waste materials. These lagoons were subsequently taken out of service and backfilled by GE. The area is presently used as a temporary waste/scrap materials storage area.

A grid with 25-foot spacings was established within the 508 basin area prior to initiating the geophysical surveys. The data collection area included a total of 61 data points. The EM conductivity data were collected at each grid node and contoured as illustrated on Figure 4. As previously discussed, resistivity surveying was not completed in this area due to hardened surface soil conditions.

A review of Figure 4 indicates that, in general, apparent soil conductivity values ranged from between 50 to 100 mmhos/m. The apparent extent of the waste disposal/basin areas are delineated by the 100 mmho/m contour interval (Figure 4). Circumscribed within the 100 mmho/m contour is a 50 mmho/m conductivity low. This low area may represent less conductive materials used to backfill the former lagoons, or nonconductive petroleum based waste oils which may have been placed when the basins were active. In-phase EM-31 data indicate that subsurface metals are present within the former 508 basin area, ranging from discrete locations along grid lines 12, 13, and 14, to elongated trends along lines P,Q, and R. The elongated trends are likely buried construction debris but may represent buried utilities which should be further investigated prior to initiating subsurface investigations.

Reading Road Construction Debris Area

The Reading Road construction debris area is heavily overgrown with small saplings, medium sized trees and tall grasses. The landfill site was reported to have received construction debris and fly ash waste materials from the GE facility in the past.

Due to the dense cover at the site, a survey crew from Savage Walker and Associates, Inc. cut 13 north-south traverses spaced 100 feet apart within the area. The north-south traverses were divided into 25-foot increments with the longest traverse being 300 feet long and the shortest being 175 feet long. Due to the limited width of each traverse, EM-31 quadrature phase readings were taken with the receiver pointed in a northerly direction only. The resulting data were plotted and contoured as illustrated on Figure 5. A review of Figure 5 indicates that higher conductivity values (greater than 20 mmhos/m) were found primarily 700 to 1000 feet west of the Reading Road access gate. In this area conductivity values ranged from 40 to 100 mmhos/m and likely represent primary areas of waste disposal. Conductivity values over the rest of the site were generally less than 40 mmhos/m. In-phase EM-31 data values indicated that subsurface metallic material was dispersed throughout the construction debris area.

Ten resistivity soundings were completed along the cleared traverses. A review of the data obtained from these soundings indicates the data is highly variable. These variations likely result from the heterogeneous nature of the materials deposited at the construction debris area. Resistivity soundings RRL-RS7 through RRL-RS10 indicated a lower resistivity layer present at the surface which corresponds with the EM conductivity contour data (Figure 5). This lower resistivity layer likely represents more conductive fill materials disposed in these areas.

SECTION 2 - SOIL VAPOR SURVEYS

Methods

Soil vapor sampling is an investigative technique used to locate and semi-quantitatively identify the concentration and chemical composition of subsurface volatile organic compounds (VOCs). VOCs present in ground water or soils tend to volatilize into the vapor phase and migrate upward in the vadose zone. A soil vapor sample is therefore a measure of the volatile vapors present in soil pore space in the area being sampled. Soil vapor surveys are not designed to provide a direct estimate of the concentration of a given volatile component in soils or ground water. They serve to provide a basis for evaluating the relative concentration of VOCs present in the vadose zone for the purpose of locating the existence of volatile contaminants in a given area. VOC concentrations observed in soil vapor are influenced by the volume of soil pore space, soil temperature and soil moisture content.

The approach used in this investigation involved placement of soil vapor probes in areas directly in or adjacent to locations of previous petroleum or chlorinated hydrocarbon handling. Samples were therefore collected in order to determine where subsoils contained residuals of these hydrocarbons, and what the areal extent of those residuals might be. To make efficient use of soil vapor samples, a baseline traverse was established across the sampling areas, and samples were placed at discrete intervals along the traverse. Based on the distribution of VOCs along the baseline traverse, perpendicular traverses were established to evaluate the distribution of subsurface VOCs in each area. In cases where a traverse method was not feasible due to obstructions, samples were situated in a grid type pattern to obtain coverage of as much of an area as possible. Sample

locations for each of the nine areas of study are discussed in the results section and are presented in Figures 6 through 14.

Samples were collected through dedicated aluminum shield points attached to lengths of teflon tubing. The teflon tubing/shield point assembly was driven to depth using hardened steel sampling probes and an electric impact hammer. Prior to collection of a sample, the hardened steel probe was retracted 3 to 6 inches to expose the vapor intake slots of the shield point. The samples were collected by attaching a 50 ml ground glass syringe, via a length of tygon tubing, to teflon tubing/shield point assembly. A sample of vapor was obtained by drawing back the syringe plunger and closing the stopcock. Prior to collection of the sample for analysis, approximately five tubing volumes of vapor was purged form the sampling train to minimize ambient air contributions to sample results.

Samples were analyzed using a Photovac 10S70 Portable gas chromatograph (GC) equipped with a CPSIL-5 capillary column, isothermal column oven and 10.6 eV photoionization detector. A 100 µl gastight syringe was inserted into the 50 ml glass collection syringe and a precise aliquot of vapor sample was drawn for direct injection into the GC for analysis.

The GC was calibrated during the investigation to benzene, toluene and xylene (BTX). Prior to each day of sampling a four point calibration to BTX was performed. Included was a zero level standard or syringe blank and three concentration levels (0.05, 0.1 and 0.25 ppm) of each calibrant. In addition, a mid-level standard was run after every ten samples and/or at the end of each day of analysis to account for variations in instrument response.

Sample quantification was completed by performing a least squares regression on calibrant data to develop an equation for each calibrant relating peak area to sample concentration. Sample peaks consistent with calibrant standards, on the basis of retention time, were quantified using the corresponding calibration equation. Sample peaks which were inconsistent with calibrant standards, on the basis of retention time, where grouped, quantified using the benzene calibration equation, and labelled "Other VOCs". A measure of "Total VOCs" was calculated by adding the calibrant standard concentrations to the "Other VOCs" concentration.

Results

Building 306 Drum Storage Area

The drum storage area, located northeast of building 306, is a square concrete pad with approximate dimensions of 70 x 70 feet (Figure 1). No samples were collected within the confines of the storage pad, so as not to disturb the concrete acting as a retention basin. Therefore, eight baseline samples were placed immediately outside the four corners of the pad and at the midway point of each side and an additional 15 samples were taken around the pad. A total of 23 samples were collected to evaluate the presence of subsurface VOCs in the vicinity of the Building 306 drum storage area (Figure 6). A depth profile was performed at location DS-1 to evaluate the variation of soil vapor concentration and chemical quality with depth. The depth profile included collection of samples from 3, 5 and 7 feet below grade. Based on the results of the depth profile, a sampling depth of 5 feet below grade was chosen for the remainder of the samples.

The results of the soil vapor sampling at the drum storage area are presented in Table 5. VOCs were detected in the 23 samples collected near the drum storage area at total concentrations ranging from 0.6 ppm to 15,371 ppm. The VOCs detected in the immediate vicinity of the concrete pad were tentatively identified as the chlorinated hydrocarbons trichloroethene (TCE) and trichloroethane (TCA), with TCE being the major constituent. The highest concentrations of TCE and TCA were observed to the west of the concrete pad. As sampling moved away from the concrete pad to the west and south, the chromatographic pattern became more complex and appeared to be a combination of chlorinated hydrocarbons and petroleum hydrocarbons. As sampling approached buildings 306 and 307, total VOC concentrations increased and chlorinated hydrocarbon concentrations fell off. Samples DS-20 and DS-22 revealed concentrations which were considerably higher than all other samples. These samples were collected in the vicinity of the former leaky JP-5 underground storage tank(s). The VOCs observed in samples DS-20, DS-22 and the samples near buildings 306 and 307 do not appear to have originated from the drum storage area.

East Landfarm:

The east landfarm area is located immediately east of the Cleveland-Cincinnati-Chicago-St.Louis rail road (Figure 1). The area was formerly a farmers field, and was reportedly used to dispose of sludges from the lime precipitate basins. Samples were collected along the baseline traverse established by Savage Walker and Associates, using a foot grid spacing (Figure 7). Subsequent samples were collected from perpendicular traverses located at 0, 400, 800 and 1300 feet from the northern most grid point of the baseline traverse. Each of these samples was situated 200 feet east or west of the baseline traverse. A total of 15 samples were used to evaluate the area.

The results of the soil vapor sampling in the east landfarm are presented in Table 6. VOCs were detected in the 15 samples collected from the east landfarm at total VOC concentrations ranging from 0.3 ppm to 3.7 ppm. The chromatographic pattern of the samples from the landfarm was consistent with that of a weathered petroleum residue. The chromatographic pattern observed in samples from the east landfarm was compared to the patterns of various petroleum products (i.e gasoline, heating oil, diesel fuel and jet fuel). The pattern observed in the samples was similar to that expected for a petroleum product, although not all constituents were present. This observation suggests that the residue had been present in the subsurface for a length of time sufficient to cause "weathering" or degradation of some of the constituents.

The VOC concentrations were evenly distributed across the area sampled, and no spatial trend was observed at a resolution of 200 feet.

Former North Landfarm

The north landfarm area is located on the northern periphery of the site, immediately north of the former Ford Motor Company property (Figure 1). The north landfarm was formerly used for disposal of solid residue from non-process oil/water separators and plant drainage systems which may have contained carbon particles, organic hydrocarbons and metals associated with oil and jet fuels. The area sampled has the approximate dimensions of 800 ft by 600 feet and is flat with grass cover. A total of eleven samples were collected to evaluate the presence of subsurface VOCs in the area. Three samples were collected along the east/west baseline traverse with a spacing of 300 feet, and four samples each were collected from the perpendicular traverses located at the 2+00' and 6+00' survey hubs (Figure 8).

Results of the sampling in the north landfarm area are presented in Table 7. VOCs were detected in the eleven samples at total concentrations ranging from 0.8 ppm to 4.4 ppm. The chromatographic pattern observed was once again consistent with that of a weathered petroleum residue. The concentrations observed in the eleven samples were evenly distributed across the sampled area, and no spatial trend was observed.

Reading Road Construction Debris Area:

The Reading Road construction debris area is situated to the east of the railroad and between East Fork Mill Creek and Copper Creek (Figure 1). The area is heavily wooded with approximate dimensions of 1400 by 400 feet, where building rubble and miscellaneous construction debris was formerly disposed. A baseline traverse was surveyed in the east/west direction which consisted of fourteen locations with a spacing of 100 feet. Perpendicular traverses were advanced at each 100 foot interval which extended to the south until the extent of fill was reached. A total of eleven samples were collected to evaluate the presence of subsurface VOCs in the construction debris area. Samples were collected along the baseline traverse using a spacing of 200 feet and four samples were collected along perpendicular traverses located at survey hubs 3+00 and 11+00 feet (Figure 9).

Results of the sampling in the Reading Road construction debris area are presented in Table 8. VOCs were detected in the eleven samples at total VOC concentrations ranging from 0.38 ppm to 4.7 ppm. The chromatographic pattern observed in the samples was consistent with that of a weathered petroleum residue. The eleven samples collected from the area exhibited evenly distributed concentrations of VOCs and no spatial trend was observed at a resolution of 100 feet.

Former 508 Basins (Scrap Yard Area)

The former 508 basins near the scrap yard is located to the west of the intersection of Neumann Way and the Cleveland-Cincinnati-Chicago-St. Louis Rail Road (Figure 1), and is used to consolidate metal scrap for disposal or recycling. The scrap yard formerly housed two petroleum sludge basins which were located in the vicinity of survey hubs 1+00 and 2+50 feet (Figure 10). The scrap yard area is covered by concrete on the southern half and gravel on the northern half, and has the approximate dimensions of 375 by 275 feet. A total of eighteen samples were used to evaluate the presence of subsurface VOCs in the scrap yard, and all were collected from the northern portion not obstructed by concrete (Figure 10). The east/west traverse intersecting the two former lagoons was chosen as the baseline traverse. Seven locations were sampled along the baseline traverse using a spacing of 25 feet. Samples were collected from perpendicular traverses located at survey hubs 0+75, 1+25, 1+75, 2+50 and 3+00 feet.

Results of the sampling in the scrap yard area are presented in Table 9. VOCs were detected in the eighteen samples at total concentrations ranging from 0.29 ppm to 739.5 ppm. The chromatographic pattern of the scrap yard samples was consistent with that of a petroleum residue. The highest concentrations of VOCs were observed in the western/central portion of the scrap yard in the vicinity of the most recently active lagoon. The concentrations observed in samples SY-1 through SY-8 and SY-13 are elevated with respect to the remainder of the samples; however, the VOC concentrations drop off to lower levels rapidly. VOCs were observed in the vicinity of the second lagoon, located in the eastern/central portion of the scrap yard, but at considerably lower concentrations than observed for the first lagoon.

Trash Pile Area

The trash pile is located immediately south of the east landfarm area (Figure 1). The trash pile is a heavily vegetated, mounded area with approximate dimensions of 300 by 200 feet. The baseline traverse utilized for the east landfarm also served as the baseline traverse for the trash pile. A total of sixteen samples were collected to evaluate the presence of subsurface VOCs in the trash pile area (Figure 11). Nine samples were collected along the baseline traverse using a spacing of 25 feet, and seven samples were collected along two perpendicular traverses intersecting survey hubs 1+75 and 2+75 feet.

Results of the sampling in the trash pile are presented in Table 10. VOCs were detected in the sixteen samples at total VOC concentrations ranging from 0.64 to 4.0 ppm. The chromatographic pattern observed from the trash pile samples was consistent with that of a weathered petroleum residue. The VOCs concentrations observed were evenly distributed across the sampling area and no spatial trend was observed at a resolution of 25 feet.

Loading Dock Area (South of Bldg. 700):

The loading dock area is located on the south side of building 700 (Figure 1). The catch basin in this area was reportedly the location of a previous solvent spill. A total of eleven samples were utilized to evaluate the presence of subsurface VOCs in the loading dock area. Samples were situated on a set of perpendicular traverses originating at the storm drain. Eight samples were collected from the east/west traverse and three from the traverse extending to the south (Figure 12).

Results of the sampling in the loading dock area are presented in Table 11. VOCs were detected in the eleven samples at total VOC concentrations ranging from 0.38 ppm to 5.6 ppm. The highest concentration was observed in sample SD-3 situated immediately adjacent to the catch basin. Total VOC concentrations dropped of as sampling proceeded away from the catch basin. Samples SD-1 through SD-5, SD-7, SD-8 and SD-11 exhibited peaks tentatively identified, through a library search, as the chlorinated solvents TCE and TCA (1,1,1 and 1,1,2 isomers). Samples SD-6, SD-9 and SD-10 exhibited the same chlorinated hydrocarbons as well as peaks consistent with a weathered petroleum residue. These samples were situated near two large dumpsters containing scrap metal where machine and/or other oils were observed on the ground surface.

Trichloroethane (TCA) Storage Tank Area

The TCA storage tank area is located on the north side of building 700 (Figure 1). The area consists of four above ground storage tanks, two containing TCA and two containing DTE-25. The tanks are situated on a concrete pad which serves as a containment basin. A total of ten samples were utilized to evaluate the presence of subsurface VOCs in the area. The baseline traverse was situated immediately to the north of the tank retention basin and ran in the east/west direction. A second traverse was established parallel to the baseline traverse which intersected the tank farm (Figure 13). No traverse was established perpendicular to the baseline traverse due to the presence of two actively traveled roadways. The baseline traverse included six samples and the parallel traverse indicated four samples.

Results of the sampling from the TCA storage tank area are presented in Table 12. VOCs were detected in the ten samples at total VOC concentrations ranging from 1.3 ppm to 36.8 ppm. With

the exception of sample ST-4 and ST-6, situated to the west of the tank farm, the VOCs observed were tentatively identified as the chlorinated hydrocarbons TCA, TCE and tetrachloroethene (PCE). Samples ST-4 and ST-6 exhibited the same chlorinated hydrocarbons as well as peaks consistent with a petroleum residue. The chlorinated hydrocarbons appeared to be a result of a spill or leak from piping in the tank farm, while the source of the petroleum hydrocarbons could not be determined.

Building 705 Waste Drum Accumulation Area:

The waste drum accumulation area, or transformer area, is located to the south of building 703 and was formerly situated next to building 705 (Figure 1). A fenced-in power station presently exists in the area. Since the fenced area could not be accessed due to an electrocution hazard, and a traverse approach was not feasible, baseline samples were placed on the four corners of the power station and at the midpoint of each side. Based on the results of the baseline samples, additional samples were placed between the power station and building 703 (Figure 14). A total of twelve samples were utilized to evaluate the presence of subsurface VOCs in the area surrounding the power station.

Results of the sampling performed at the waste drum accumulation area are presented in Table 13. VOCs were detected in the twelve samples at total VOC concentrations ranging from 0.28 to 91.9 ppm. Samples collected from the south, east and west sides of the power station exhibited peaks tentatively identified as chlorinated hydrocarbons (TCA and TCE), with TCE being the major constituent. Samples collected from the north side of the power substation exhibited what appears

to be a combination of the chlorinated hydrocarbons and a weathered petroleum residue. The samples which exhibited the highest concentrations of VOCs were situated near building 703 and may or may not be associated with the drum accumulation area.

SECTION - 3 PROPOSED SURFACE SOIL AND SOIL BORING LOCATIONS

Based on the results of the geophysical and soil vapor surveys, and in accordance with Section 3.05 of the approved Work Plan, proposed locations for surface soil samples and subsurface soil boring borings were selected.

Drum Storage Area

A single soil boring is proposed to be completed adjacent to the south corner of the Drum Storage Area. The proposed location of this boring is in the vicinity of soil vapor sample number 2 (Figure 6).

East Landfarm

Four soil borings and six surface soil samples will be completed in the east landfarm area. The proposed locations of the soil borings will be adjacent to soil vapor sample numbers 8, 11, 12, and 15 as shown on Figure 7. Proposed surface soil samples will be collected at locations 8, 9, 10, 11, 12, and 15 (Figure 7).

North Landfarm

Ten soil borings will be completed in north landfarm area. The proposed soil boring will be located at grid nodes A6, B4, C2, D1, D4, D7, E2, F3, G2, and G6 (Figure 2).

Reading Road Landfill

Four surface soil samples will be collected at the Reading Road construction debris area. The proposed sampling locations include soil vapor sampling numbers 4, 5, 6, and 7 as shown on Figure 9.

Former 508 Basins (Scrap Yard Area)

Two soil borings will be completed in the scrap yard area. The proposed soil boring locations include soil vapor sampling number 3 and 13 (Figure 10)

Trash Pile Area

Four soil borings and six surface soil samples will be completed in the trash pile area. The proposed soil boring locations include soil vapor sampling number 3, 10, 14 and 16. Surface soil samples will be collected at locations 3, 9, 10, 11, 14 and 16.

Building 700 Loading Dock

Two soil borings will be completed in the loading dock area. The proposed boring locations will include soil vapor sample number locations 3 and 7 (Figure 12). In addition, a shallow monitoring well will be installed at location 3.

Trichloroethane (TCA) Storage Tank Area

Two soil borings will be completed in the TCA storage tank area. The proposed boring locations will include soil vapor sample number locations 1 and 5 (Figure 13). In addition, a shallow monitoring well will be installed at location 1.

Waste Drum Accumulation Area

One soil boring will be completed in the drum accumulation area. The proposed boring locations will be at soil vapor sample number locations 9 (Figure 14).

WJG:ers/EVAN004.10

Tables

O'BRIEN & GERE

24-Mar-92

TABLE 1
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
FORMER NORTH LANDFARM AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE A		LINE B		LINE C		LINE D	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
1	25	25	70	77	26	27	24	24
2	23	23	27	26	24	23	22	22
3	25	24	29	32	26	26	21	20
4	20	21	48	24	36	35	15	22
5	20	20	26	26	21	21	20	21
6	21	21	21	21	21	21	22	23
7	23	23	11	14	24	24	27	27
8	28	28	22	21	25	26	34	34
9	28	28	42	40				

TABLE 1
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
FORMER NORTH LANDFARM AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE E		LINE F		LINE G	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
1	16	18	22	24	21	22
2		20	21	21	25	25
3	21	23	17	17	22	22
4	22	21	19	19	24	23
5	19	20	21	21	25	26
6	21	21	26	26	32	32
7	27	28				
8						
9						

24-Mar-92

TABLE 2
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
TRASH PILE AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE A		LINE B		LINE C		LINE D	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
4								
5	210	210	440	440	240	220	72	60
6	115	120	180	210	290	295	285	275
7			125	125	240	250	380	360
8			94	94	170	180	340	350
9			96	98	170	175	250	265
10			120	130	200	210	200	210
11			135	140	180	190	185	190
12			110	110	125	120	130	130
13			90	88	52	68		
14			42	40				

TME:cmb/GE004.1

TABLE 2
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
TRASH PILE AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE E		LINE F		LINE G		LINE H		LINE I	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
4									10	24
5	30	30	24	24	27	27.5	29	30	33	34
6	96	100	88	90	58	64	58	60	48	48
7	400	400	220	230	190	190	160	150	78	80
8	450	460	440	420	330	320	205	180	110	96
9	300	300	350	350	260	250	160	160	105	94
10	260	270	300	300	160	150	90	84		
11	230	235	180	180						
12										
13										
14										

TABLE 2
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
TRASH PILE AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE J		LINE K		LINE L		LINE M		LINE N	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
4	29	28								
5	38	34	35	36	31	31	19	20	23	27
6	40	44	38	38	21	24	22	24		
7	48	48	30	29						
8	63	56								
9										
10										
11										
12										
13										
14										

TABLE 3
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
FORMER 508 BASINS AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE L		LINE M		LINE N		LINE O	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
4								
5								
6			60	60				
7	<0	<0	67	60	56	56	50	50
8	<0	<0	<0	<0	66	72	60	62
9	<0	<0			120	110	56	52
10	44	75	160	<0	68	54	50	42
11	56	54	40	40	40	<0	36	34
12	54	60	42	48	44	46	38	40
13	120	119	110	82	94	1.2	44	<0
14	140	130	72	100	62	54	60	59
15					140	76		

TABLE 3
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
FORMER 508 BASINS AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE P		LINE Q		LINE R		LINE S		LINE T	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
4										
5			48	46						
6	40	38	100	20						
7	37	38	42	40						
8	42	42	40	40	33	48				
9	46	40	42	40	44	46	86	120		
10	64	66	160	76	78	88	120	110		
11				210			56	58		
12	44	36	80	70	150	150	135	180	115	116
13	60	<0	150	36	220	210	180	200		
14	120	200								
15										

TABLE 4
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
READING RD. CONSTRUCTION DEBRIS AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE A		LINE B		LINE C		LINE D	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
+00	24		42		32		5	
+25	38		50		35		30	
+50	22		26		19		19	
+75	16		32		14		20	
+100	19		28		19		22	
+125	17		22		20		23	
+150	10		16		22		23	
+175	26		19		10		26	
+190								
+200	21		13		14		20	
+210								
+225			12		13		52	
+250			10		15		18	
+275			<0		10		14	
+300			16		14		16	

TABLE 4
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
READING RD. CONSTRUCTION DEBRIS AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE E		LINE F		LINE G		LINE H		LINE I	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
+00	24		26		54		50		66	
+25	<0		17		30		92		120	
+50	12		16		22		54		60	
+75	13		16		21		38		38	
+100	23		<0		22		42		26	
+125	24		14		24		34		30	
+150	25		16		21		21		34	
+175	25		16				38		28	
+190					13					
+200	19		16				30		26	
+210										
+225	24		13							
+250	17		12							
+275										
+300			27							

TABLE 4
GE AIRCRAFT ENGINES
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO
READING RD. CONSTRUCTION DEBRIS AREA

CONDUCTIVITY READINGS
(MILLIMHOS/METER)

	LINE J		LINE K		LINE L		LINE M	
STATION NUMBER	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION	N.-S. ORIEN-TATION	E.-W. ORIEN-TATION
+00	40		22		<0		4	
+25	62		24		<0		22	
+50	150		20		14		19	
+75	130		18		14		15	
+100	140		32		<0		15	
+125	180		62		15		<0	
+150	60		40		13		11	
+175	24		22		13		13	
+190								
+200			23		16		14	
+210	30							
+225					17			
+250			21		14			
+275					17			
+300					17			

TABLE 5
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
BLDG. 306 DRUM STORAGE AREA - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
DS-01	<0.021	<0.016	<0.024	0.580	0.580
DS-02	<0.021	<0.016	<0.024	2.932	2.932
DS-03	0.167	<0.016	<0.024	0.646	0.812
DS-04	0.060	0.208	<0.024	0.918	1.185
DS-05	0.066	<0.016	<0.024	0.414	0.480
DS-06	0.028	0.197	<0.024	2.743	2.968
DS-07	0.163	<0.016	<0.024	3.146	3.309
DS-08	0.036	0.260	<0.024	1.598	1.894
DS-09	0.462	0.152	<0.024	3.450	4.064
DS-10	0.029	0.087	<0.024	1.100	1.216
DS-11	0.037	0.087	<0.024	2.530	2.654
DS-12	0.095	0.067	<0.024	2.059	2.221
DS-13	0.038	0.087	<0.024	1.235	1.360
DS-14	0.021	0.075	<0.024	2.067	2.162
DS-15	0.032	0.048	<0.024	0.910	0.990
DS-16	<0.021	0.016	<0.024	1.619	1.633
DS-17	0.118	0.020	<0.024	1.894	2.031
DS-18	0.069	0.042	<0.024	3.458	3.569
DS-19	1.450	<0.016	0.325	22.276	24.051
DS-20	<0.021	<0.016	3.784	7552.277	7556.061
DS-21	0.527	0.261	0.740	8.313	9.841
DS-22	<0.021	<0.016	2.416	15368.515	15370.931
DS-23	0.297	0.074	0.140	4.663	5.173

NOTE: Values reported in parts per million

TABLE 6
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
EAST LANDFARM - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
EL-01	<0.021	0.087	0.024	0.343	0.430
EL-02	<0.021	0.111	<0.024	0.406	0.517
EL-03	<0.021	0.159	<0.024	0.372	0.531
EL-04	0.002	0.096	<0.024	0.198	0.296
EL-05	0.008	0.178	<0.024	0.278	0.464
EL-06	0.013	0.087	<0.024	0.247	0.347
EL-07	0.083	0.028	<0.024	0.216	0.327
EL-08	0.011	0.223	0.083	2.255	2.572
EL-09	0.002	0.123	<0.024	0.955	1.080
EL-10	0.012	0.114	0.031	1.380	1.538
EL-11	0.331	0.205	0.052	3.149	3.737
EL-12	0.331	0.196	<0.024	2.905	3.432
EL-13	0.022	0.026	<0.024	0.445	0.492
EL-14	0.023	<0.016	<0.024	0.816	0.839
EL-15	0.048	0.038	<0.024	2.038	2.123

NOTE: Values reported in parts per million

TABLE 7
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
FORMER NORTH LANDFARM - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
NL-01	0.021	0.198	<0.024	0.844	1.063
NL-04	0.027	0.177	0.034	2.454	2.693
NL-07	0.269	0.252	0.034	3.820	4.374
NL-08	0.024	0.070	<0.024	1.374	1.467
NL-09	0.019	0.067	<0.024	0.834	0.920
NL-10	0.025	0.109	<0.024	1.304	1.438
NL-11	0.029	0.116	<0.024	2.137	2.281
NL-12	0.037	0.211	0.028	1.155	1.431
NL-13	0.024	0.218	0.027	0.857	1.127
NL-14	0.024	0.116	<0.024	2.213	2.353
NL-15	<0.021	<0.016	<0.024	0.800	0.800

NOTE: Values reported in parts per million

TABLE 9
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
FORMER 508 BASINS
FORMER 508 BASINS - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
SY-01	7.678	1.121	1.274	68.307	78.380
SY-02	14.348	<0.016	4.790	61.426	80.564
SY-03	<0.021	11.705	4.192	431.000	446.897
SY-04	1.332	0.376	0.109	234.227	236.044
SY-05	3.839	0.282	0.215	66.508	70.844
SY-06	45.469	3.632	0.445	130.735	180.281
SY-07	1.138	0.473	0.237	47.901	49.750
SY-08	<0.021	9.275	6.583	357.889	373.746
SY-09	0.068	0.213	<0.024	2.575	2.856
SY-10	0.151	<0.016	<0.024	0.871	1.022
SY-11	0.014	0.062	<0.024	0.790	0.866
SY-12	0.081	0.042	<0.024	3.284	3.407
SY-13	29.410	26.108	<0.024	683.950	739.468
SY-14	<0.021	<0.016	<0.024	0.292	0.292
SY-15	<0.021	0.024	<0.024	0.314	0.338
SY-16	0.014	<0.016	<0.024	2.939	2.954
SY-17	0.036	0.242	<0.024	2.117	2.395
SY-18	<0.021	<0.016	<0.024	0.650	0.650

NOTE: Values reported in parts per million

TABLE 10
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
TRASH PILE AREA - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
TP-01	0.004	0.087	<0.024	1.685	1.776
TP-02	0.001	0.060	0.033	2.317	2.411
TP-03	0.035	0.123	<0.024	2.956	3.114
TP-04	0.003	0.169	<0.024	1.582	1.754
TP-05	0.003	0.178	<0.024	0.987	1.168
TP-06	0.008	0.133	<0.024	1.685	1.826
TP-07	0.006	0.151	<0.024	2.833	2.990
TP-08	0.001	0.051	<0.024	0.585	0.638
TP-09	0.021	0.177	0.035	2.218	2.451
TP-10	0.021	0.116	0.030	2.787	2.954
TP-11	<0.021	0.152	0.065	3.760	3.977
TP-12	0.014	0.152	<0.024	1.021	1.187
TP-13	0.014	0.098	<0.024	0.785	0.897
TP-14	0.095	0.035	<0.024	3.279	3.409
TP-15	0.035	<0.016	<0.024	1.206	1.242
TP-16	<0.021	<0.016	<0.024	2.691	2.691

NOTE: Values reported in parts per million

TABLE 11
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
BLDG. 700 LOADING DOCK - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
SD-01	0.055	0.199	<0.024	2.038	2.292
SD-02	<0.021	0.187	<0.024	1.945	2.132
SD-03	<0.021	0.178	<0.024	5.443	5.621
SD-04	0.050	0.172	<0.024	3.028	3.250
SD-05	<0.021	0.212	<0.024	1.297	1.509
SD-06	<0.021	0.288	0.144	2.487	2.919
SD-07	0.035	0.094	<0.024	3.821	3.951
SD-08	0.052	0.124	<0.024	2.239	2.415
SD-09	<0.021	0.033	<0.024	0.346	0.379
SD-10	0.022	0.037	<0.024	0.681	0.741
SD-11	<0.021	0.030	<0.024	0.550	0.580

NOTE: Values reported in parts per million

TABLE 12
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
TCA STORAGE TANK AREA - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
ST-01	<0.021	0.109	<0.024	36.646	36.754
ST-02	<0.021	0.275	<0.024	2.369	2.644
ST-03	<0.021	0.275	4.630	3.748	8.653
ST-04	0.168	0.044	0.318	3.536	4.066
ST-05	<0.021	0.825	0.055	25.050	25.930
ST-06	0.047	0.028	0.115	2.580	2.772
ST-07	<0.021	0.035	<0.024	1.278	1.314
ST-08	<0.021	0.040	<0.024	4.304	4.344
ST-09	<0.021	0.142	0.858	14.196	15.196
ST-10	<0.021	0.036	<0.024	7.145	7.181

NOTE: Values reported in parts per million

TABLE 13
GENERAL ELECTRIC AIRCRAFT ENGINES
EVENDALE,OH
RCRA FACILITY INVESTIGATION
WASTE DRUM ACCUMULATION AREA - SOIL VAPOR SURVEY RESULTS

	Benzene	Toluene	Xylene	Other VOCs	Total VOCs
SAMPLE					
TF-01	0.140	0.074	<0.024	4.384	4.598
TF-02	0.141	0.086	<0.024	3.132	3.359
TF-03	0.106	0.057	<0.024	3.510	3.673
TF-04	0.084	0.036	<0.024	1.790	1.909
TF-05	0.106	0.064	<0.024	2.223	2.393
TF-06	0.029	0.058	<0.024	1.093	1.179
TF-07	<0.021	0.040	<0.024	0.467	0.507
TF-08	<0.021	0.041	<0.024	0.333	0.374
TF-08R	<0.021	0.037	<0.024	0.237	0.275
TF-09	<0.021	<0.016	2.116	89.792	91.908
TF-10	0.113	0.053	<0.024	2.752	2.918
TF-11	0.321	0.047	<0.024	15.760	16.128
TF-12	0.026	0.037	<0.024	0.718	0.780

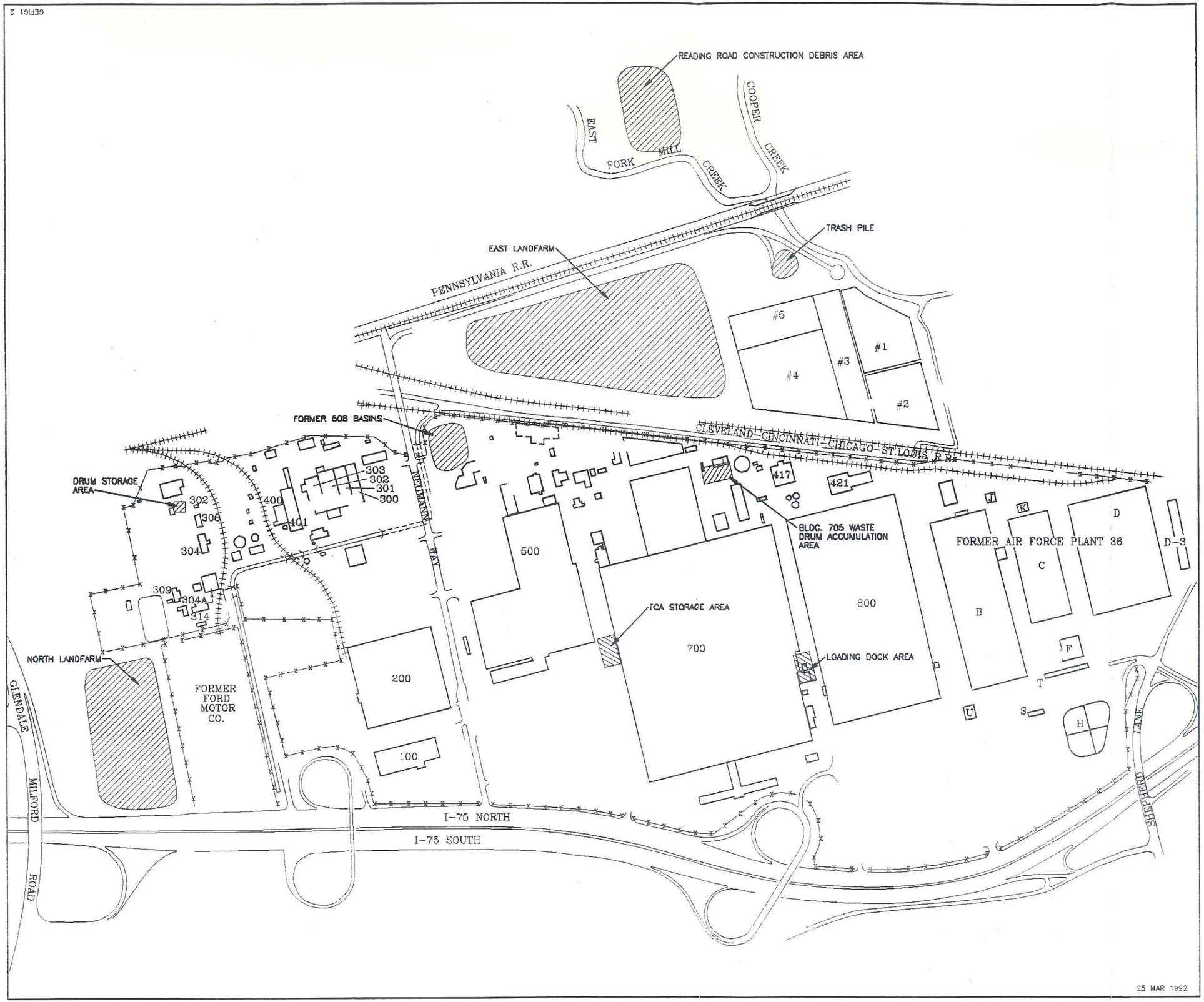
NOTES: Values reported in parts per million
TF-08R - Replicate sample

Figures

O'BRIEN & GERE

FIGURE 1

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

SURVEYED AREAS

STUDY AREAS .

600 0 600

APPROXIMATE SCALE IN FEET

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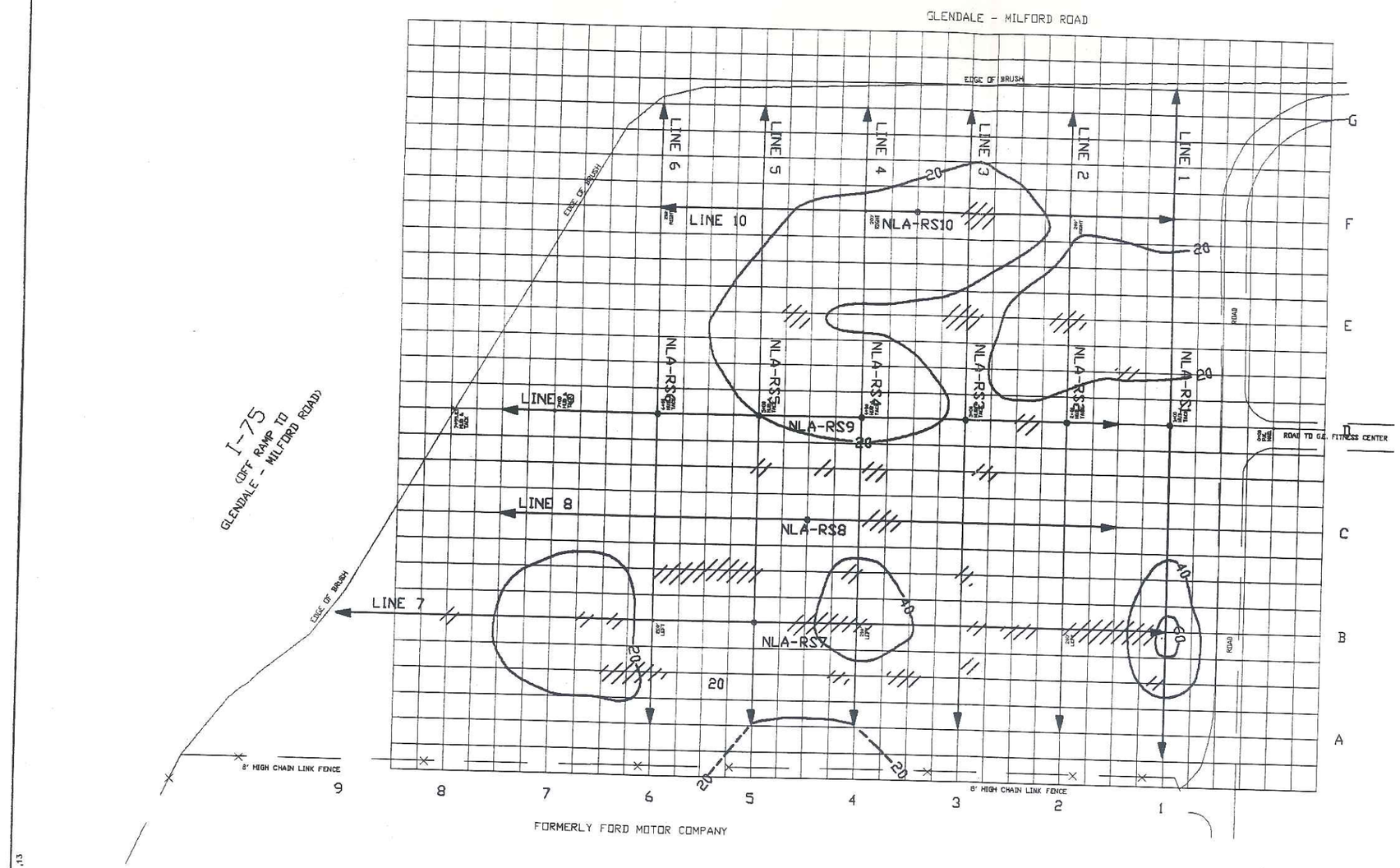
Syracuse . New York

FIGURE 2

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- GRID LINES
- FENCE
- ELECTROMAGNETIC (EM) TERRAIN CONDUCTIVITY CONTOUR (MMHOS/METER) — 20
- RESISTIVITY SOUNDING LOCATION
- ELECTROMAGNETIC (EM) (IN PHASE METAL DETECTOR MODE)

GEOPHYSICAL SURVEY MAP
FORMER NORTH LANDFARM

120 0 120

SCALE IN FEET

4603.004.550

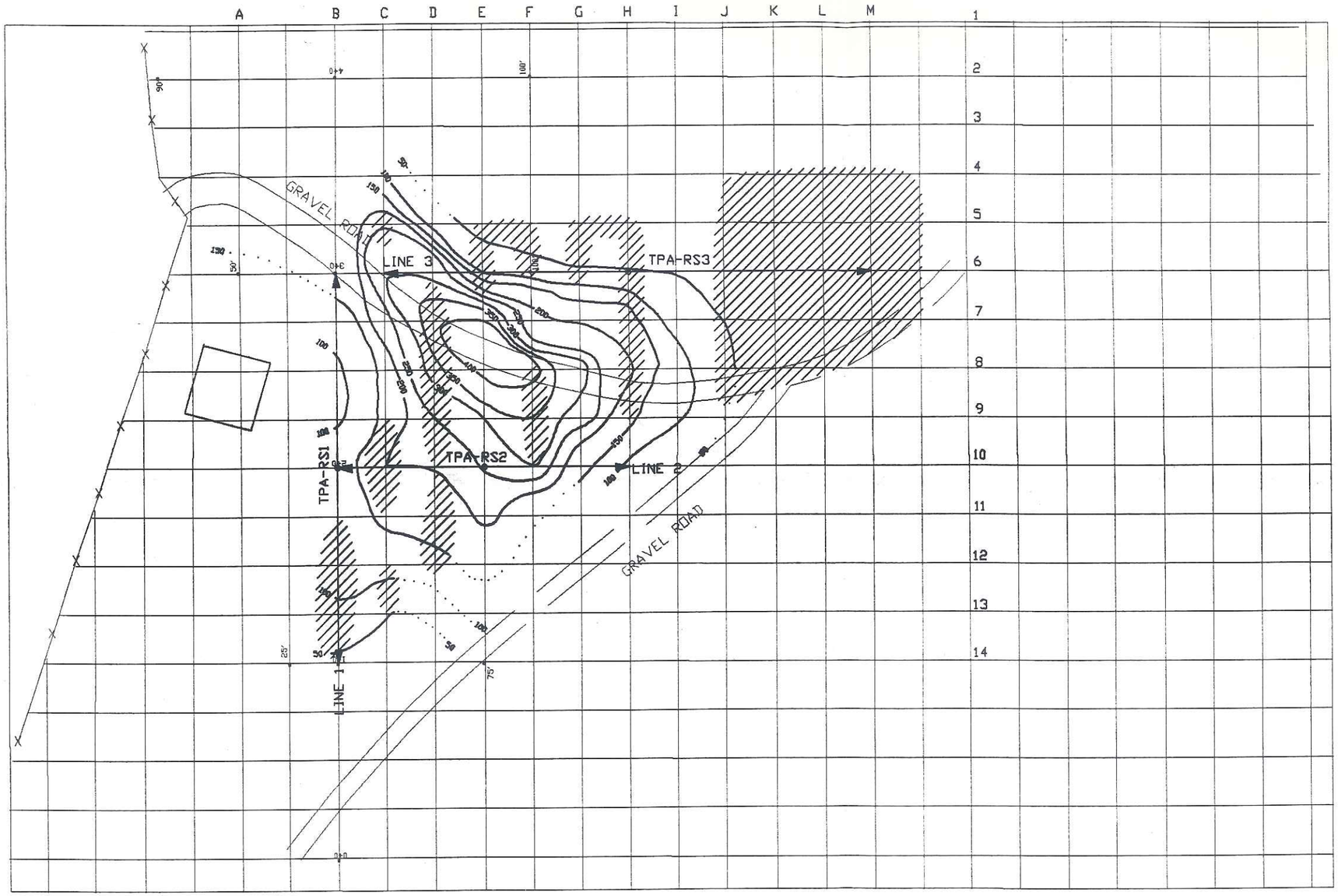
O'BRIEN & GERE
ENGINEERS, INC.

25 MAR 1992

GEEVI 1 ,3 ,4 ,5 ,6 ,11,12 ,13

FIGURE 3

GE AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- GRID LINES
- FENCE
- ELECTROMAGNETIC (EM) TERRAIN CONDUCTIVITY CONTOUR (MMHOS/METER)
- RESISTIVITY SOUNDING LOCATION
- ELECTROMAGNETIC (EM) (IN PHASE METAL DETECTOR MODE)

GEOPHYSICAL SURVEY MAP
TRASH PILE AREA

120 0 120

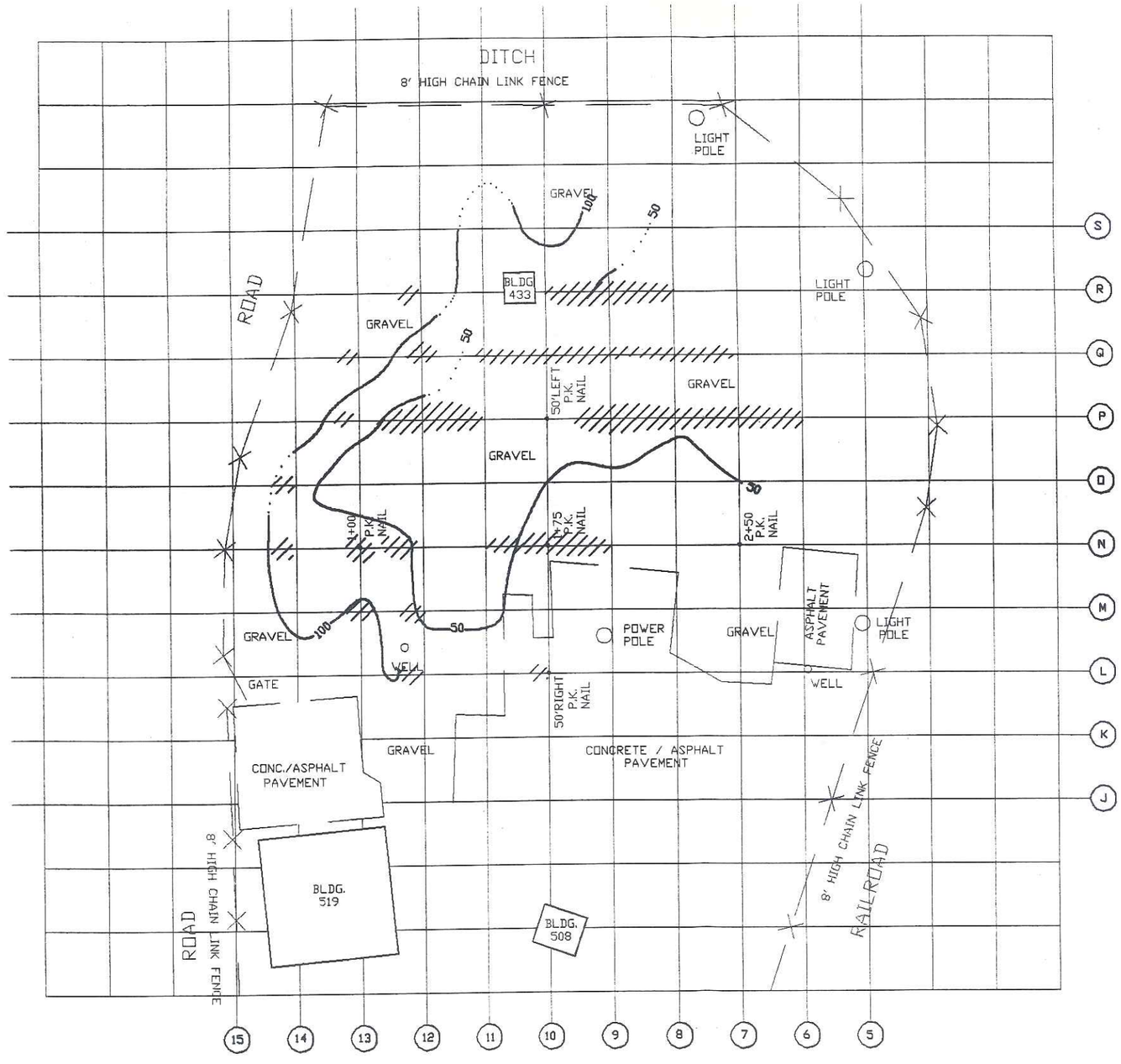
SCALE IN FEET

4603.004.550

O'BRIEN & GERE
ENGINEERS, INC.

21 JAN 1992

EEEV2 1,2 ,3 ,5 ,6 ,7 ,11,12 ,13



25 MAR 1991

FIGURE 4

GE AIRCRAFT ENGINES
EVENDALE, OHIO

LEGEND

GRID LINES

FENCE

20 ELECTROMAGNETIC (EM) TERRAIN CONDUCTIVITY CONTOUR (MMHOS/METER)

ELECTROMAGNETIC (EM) (IN PHASE METAL DETECTOR MODE)

GEOPHYSICAL SURVEY MAP
FORMER 508
BASINS AREA

80 0 80

APPROX. SCALE IN FEET

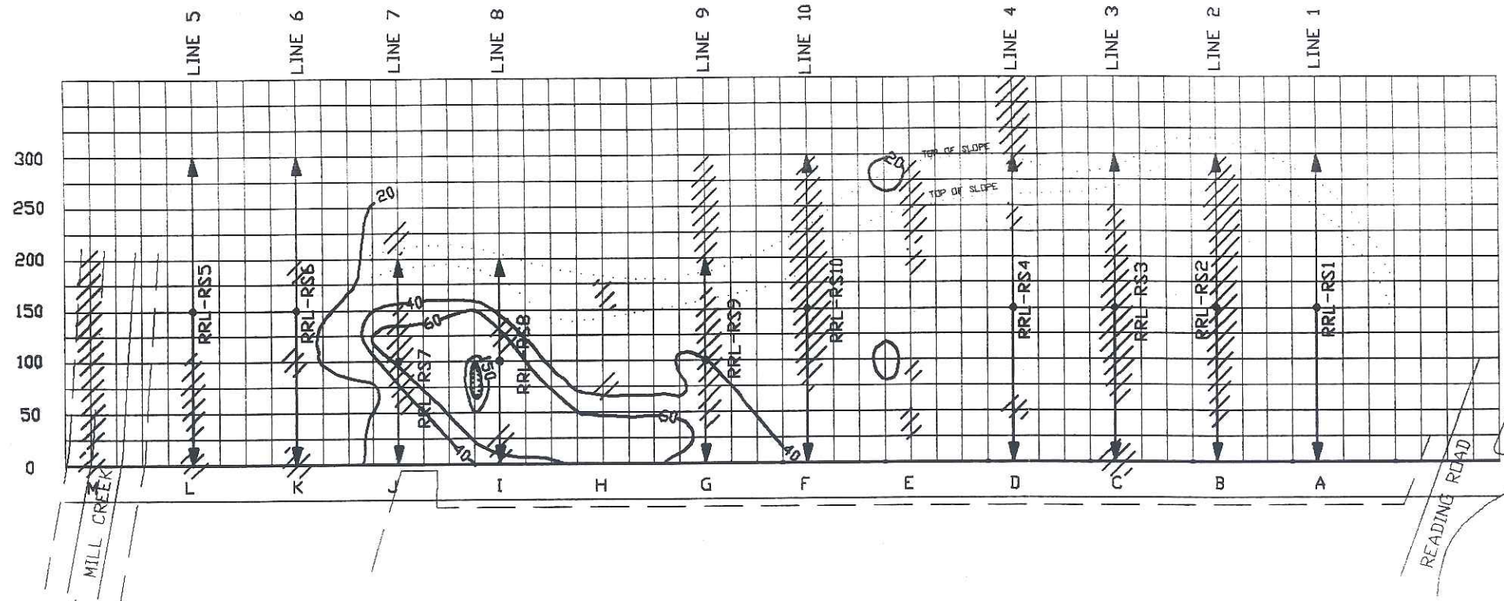
4603.004.550

O'BRIEN & GERE
ENGINEERS, INC.

GEEV3 1 ,3 ,5 ,6 ,7 ,11 ,12 ,13

FIGURE 5

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- GRID LINES
- FENCE
- ELECTROMAGNETIC (EM) TERRAIN CONDUCTIVITY CONTOUR (MMHOS/METER)
- RESISTIVITY SOUNDING LOCATION
- ELECTROMAGNETIC (EM) (IN PHASE METAL DETECTOR MODE)

GEOPHYSICAL SURVEY MAP
READING ROAD
CONSTRUCTION DEBRIS
AREA

150 0 150

SCALE IN FEET

4603.004.550

O'BRIEN & GERE
ENGINEERS, INC.

25 MAR 1992

GEEH4 1 .3 .7 .11.12 .13

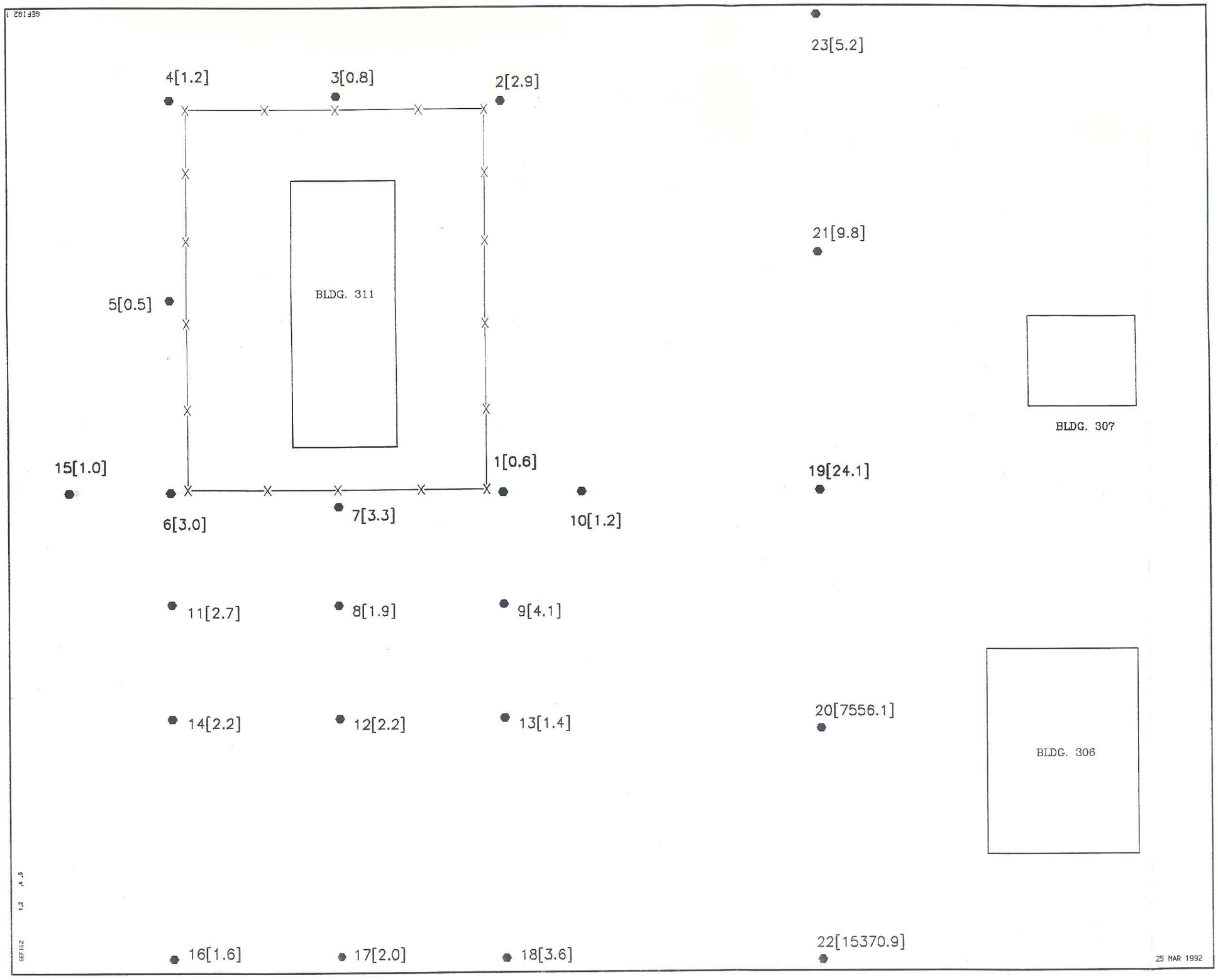


FIGURE 6

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO

LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [0.5] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY
RESULTS
BLDG. 306
DRUM STORAGE AREA

20 0 20

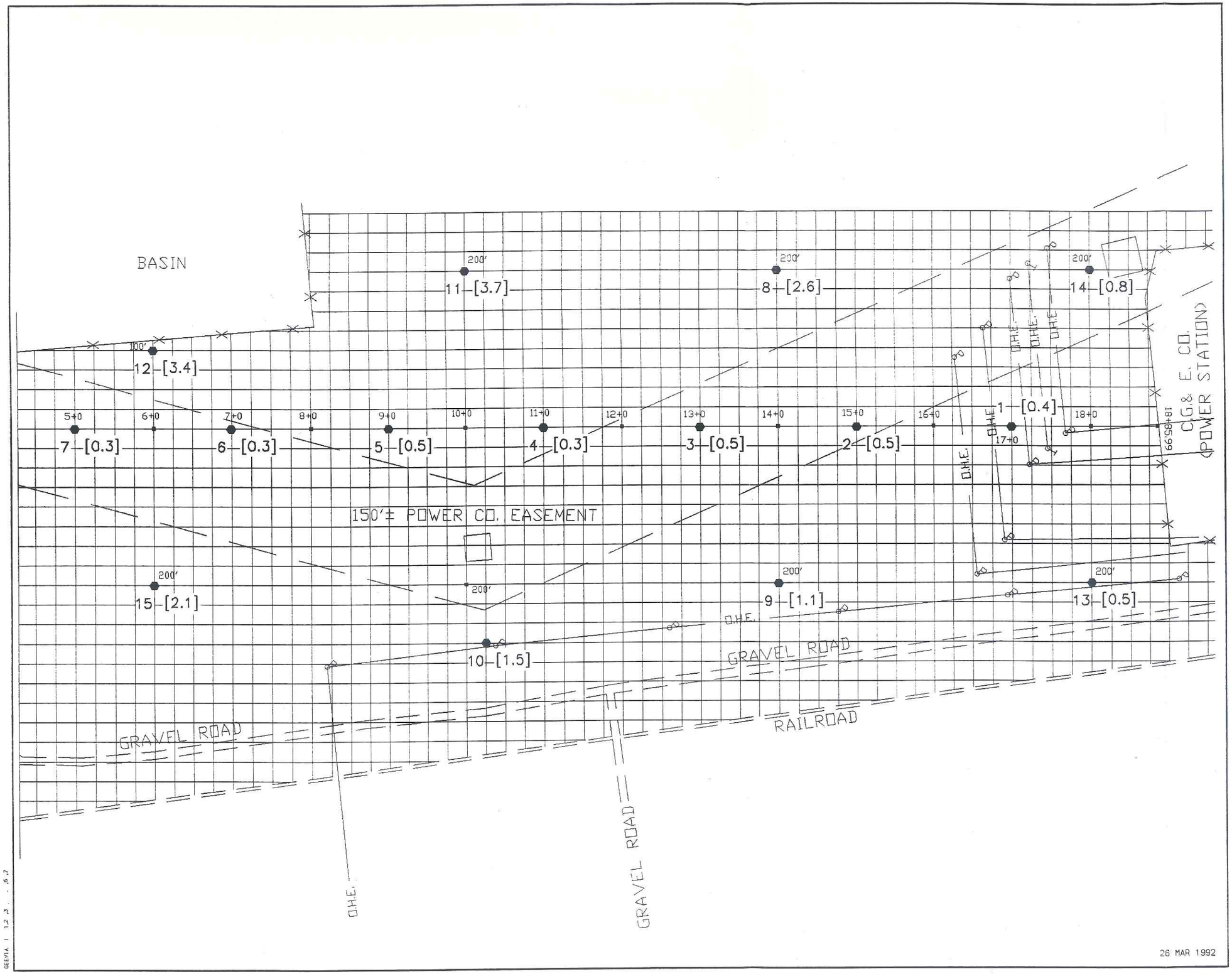
SCALE IN FEET

4603.004.831

O'BRIEN & GERE
ENGINEERS, INC.

FIGURE 7

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [2.1] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY
RESULTS
EAST LANDFARM AREA

240 0 240

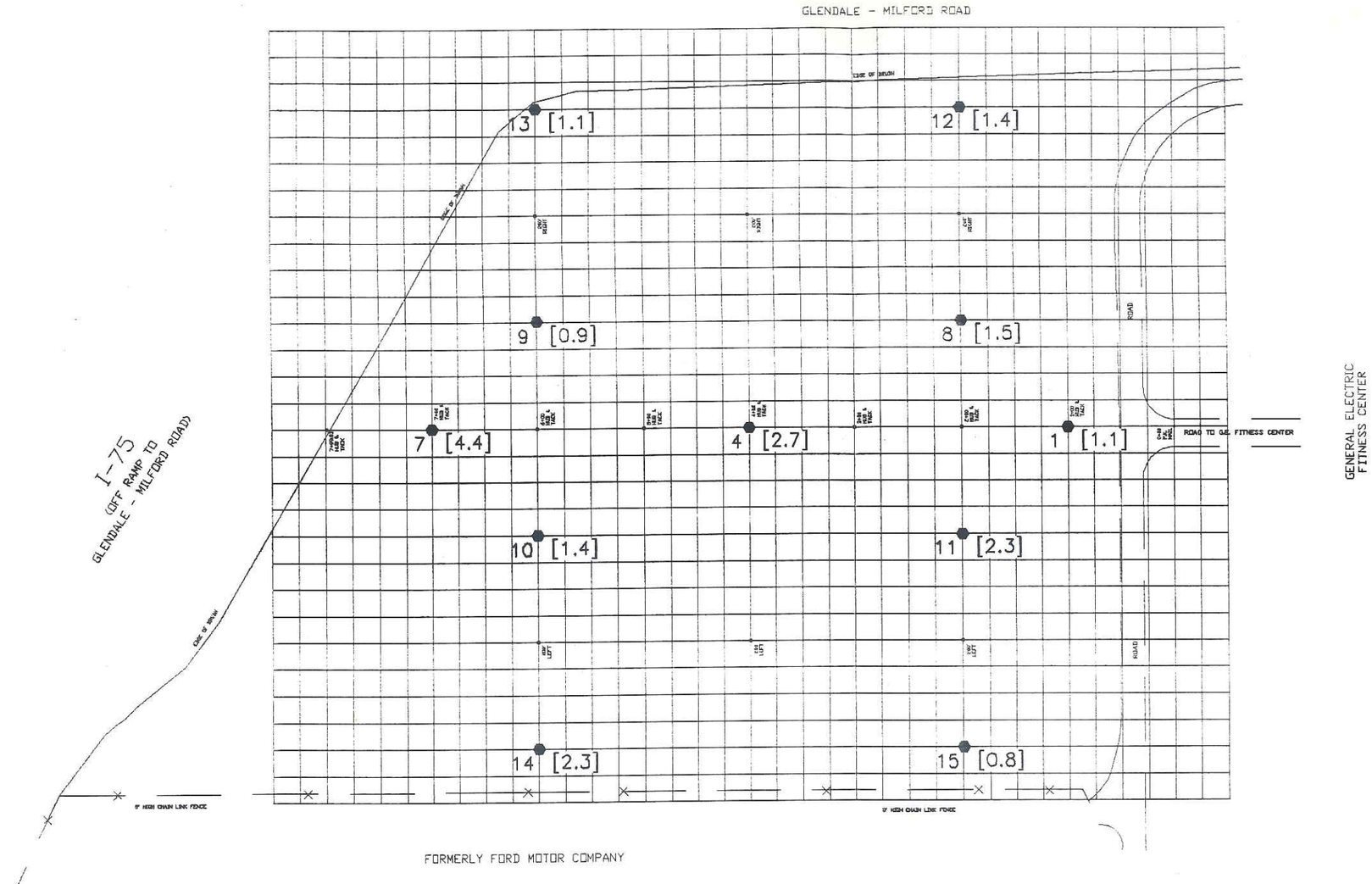
SCALE IN FEET

4603.004.831

O'BRIEN & GERE
ENGINEERS, INC.

FIGURE 8

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [2.5] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY RESULTS FORMER NORTH LANDFARM AREA

120 0 120

SCALE IN FEET

4603.004.831

O'BRIEN & GERE
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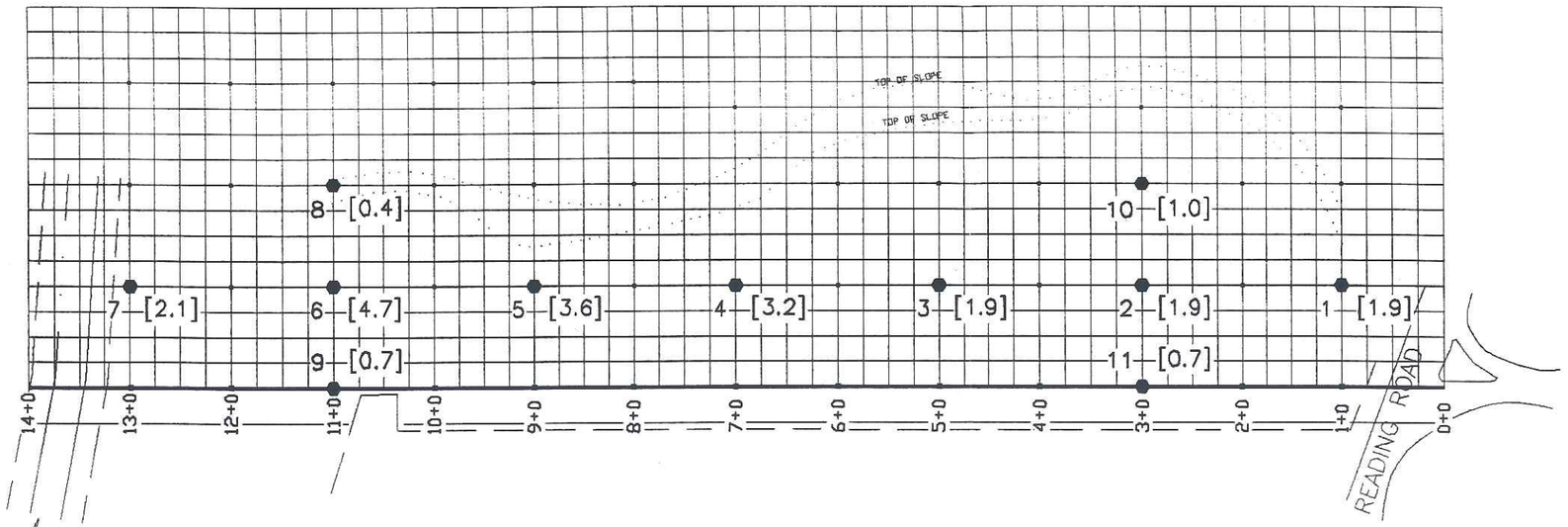
23 MAR 1992

FIGURE 9

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [2.1] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY
RESULTS READING ROAD
CONSTRUCTION
DEBRIS AREA

150 0 150

SCALE IN FEET

4603.004.831

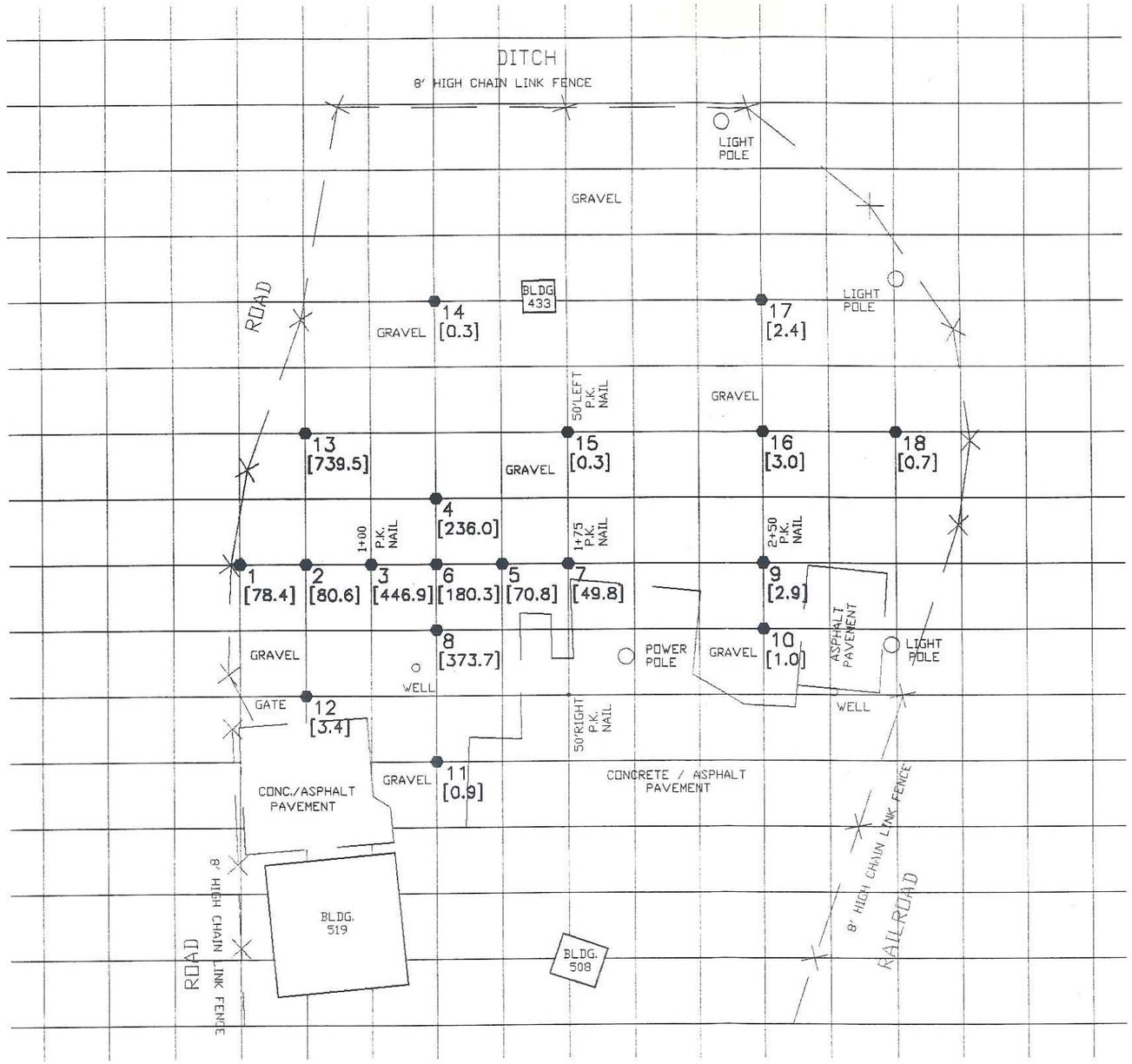
O'BRIEN & GERE
ENGINEERS, INC.

25 MAR 1992

GEEVSA 1 1.2 .3 .4 .5 .6 .7 .8

FIGURE 10

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [2.4] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY RESULTS FORMER 508 BASINS

80 0 80

APPROX. SCALE IN FEET

4603.004.831

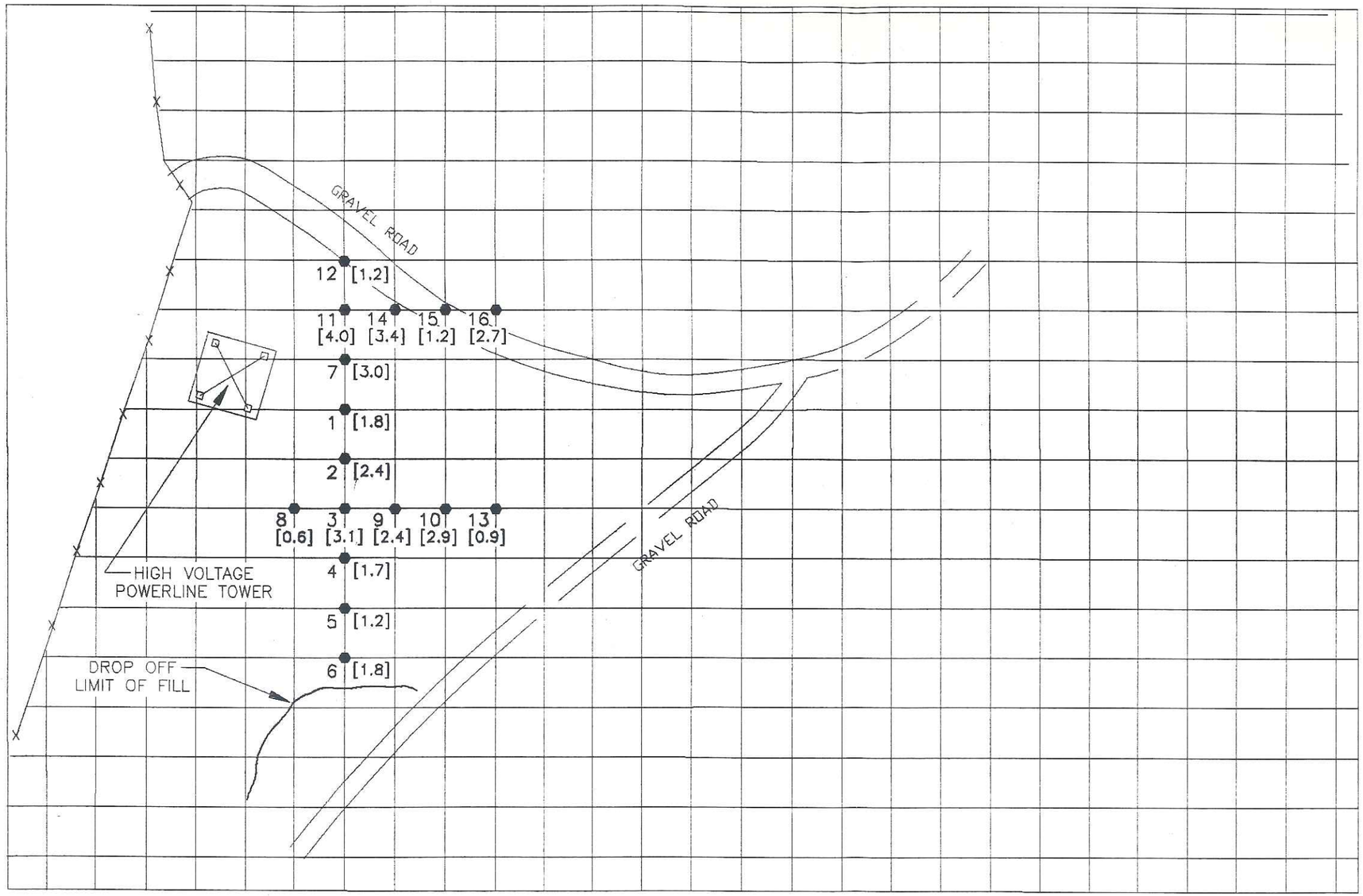
O'BRIEN & GERE ENGINEERS, INC.

26 MAR 1992

GEEV4A 1 1:2 :3 :4 :5 :6 :7 :8

FIGURE 11

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO



LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [1.2] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY
RESULTS
TRASH PILE AREA

120 0 120

SCALE IN FEET

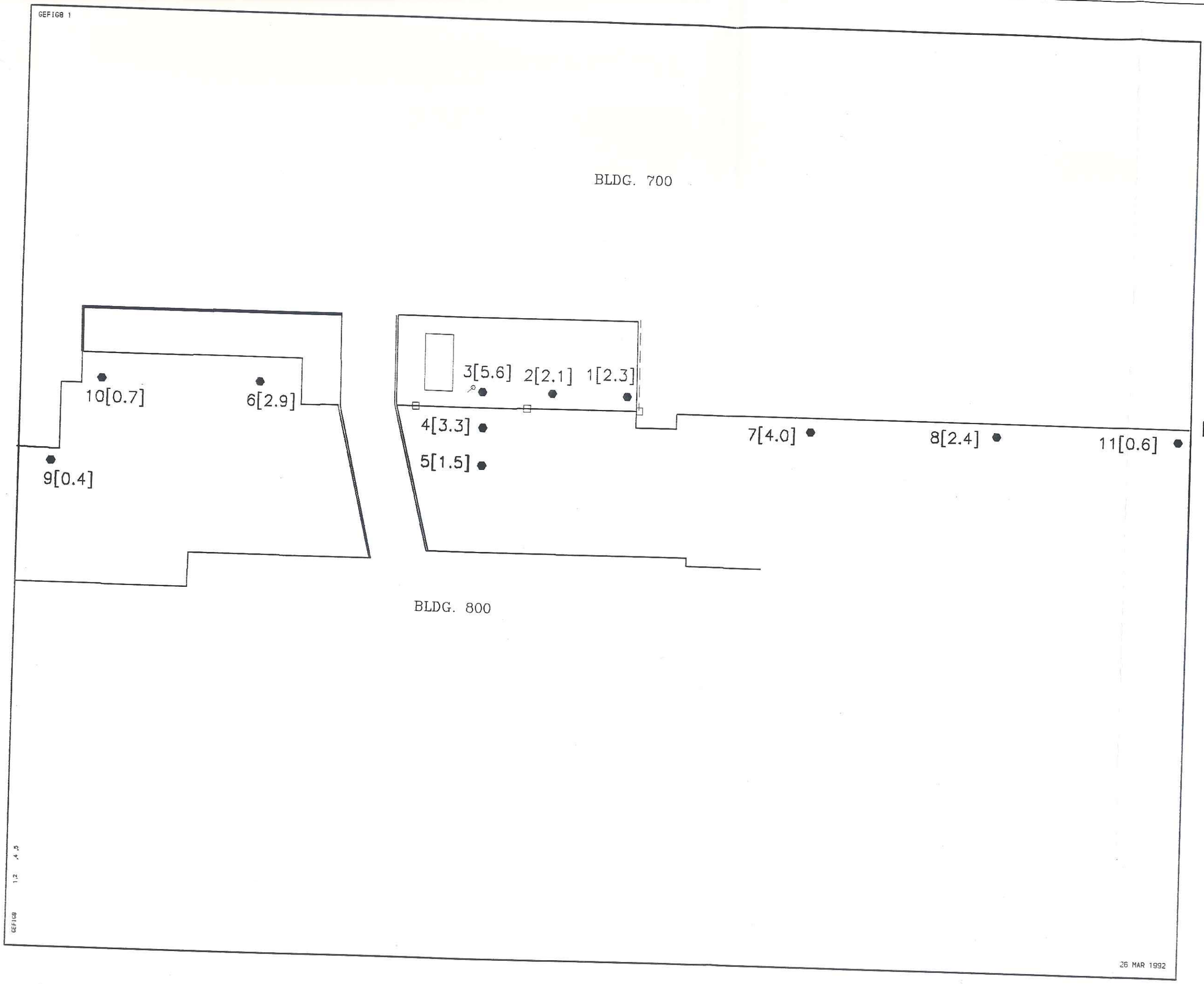
4603.004.831

O'BRIEN & GERE
ENGINEERS, INC.

26 MAR 1992

GEEVSA 1 1,2 ,3 ,4 ,B

GEFIG8 1



GEFIG8 1.2 .4.5

26 MAR 1992

FIGURE 12

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO

LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [1.5] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY RESULTS BLDG. 700 LOADING DOCK AREA

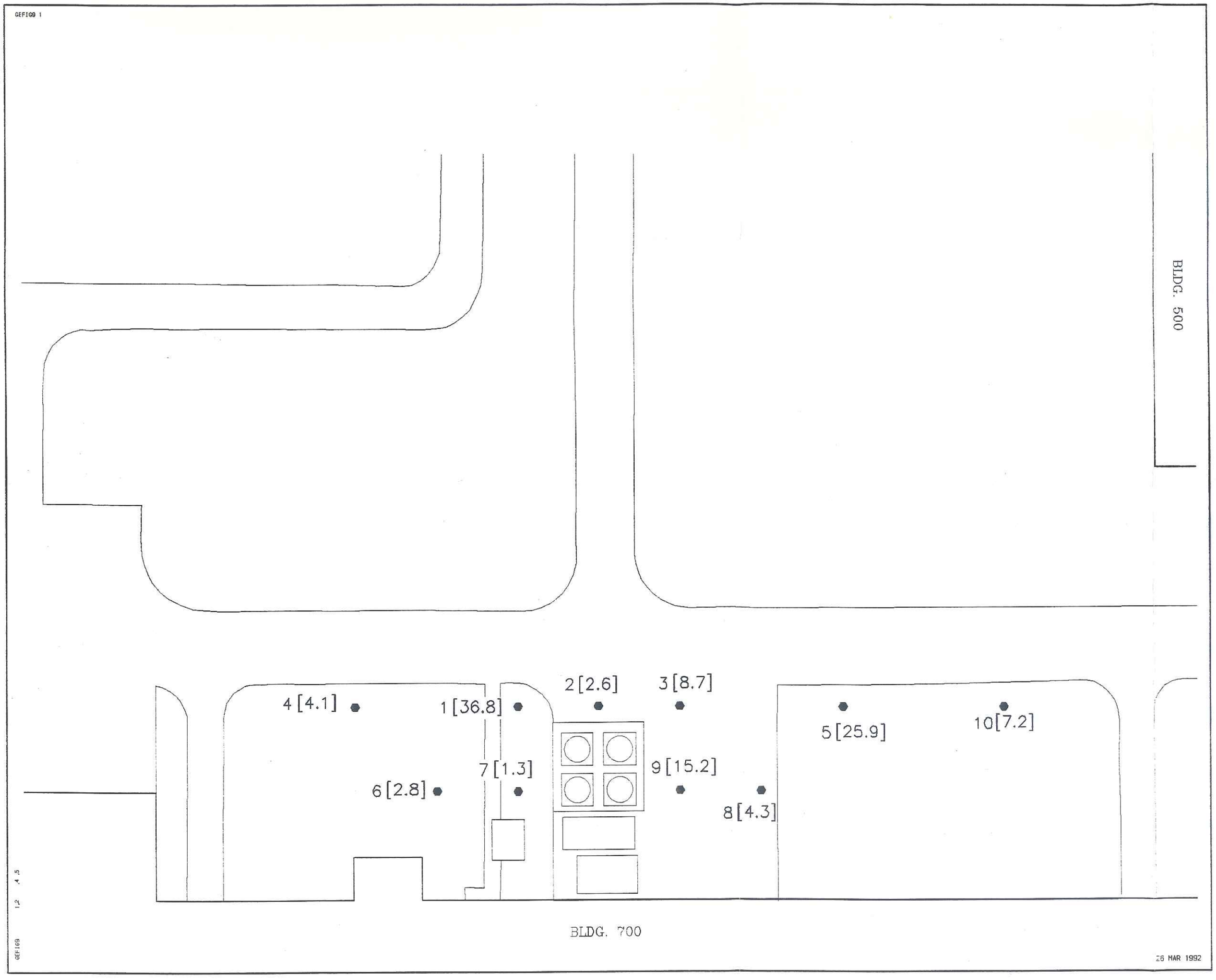
50 0 50

SCALE IN FEET

4603.004.831

O'BRIEN & GERE
ENGINEERS, INC.

GEFIG9 1



GEFIG9 1.2 .4 .5

26 MAR 1992

FIGURE 1/3

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO

LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [7.2] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY
RESULTS
TCA STORAGE
AREA

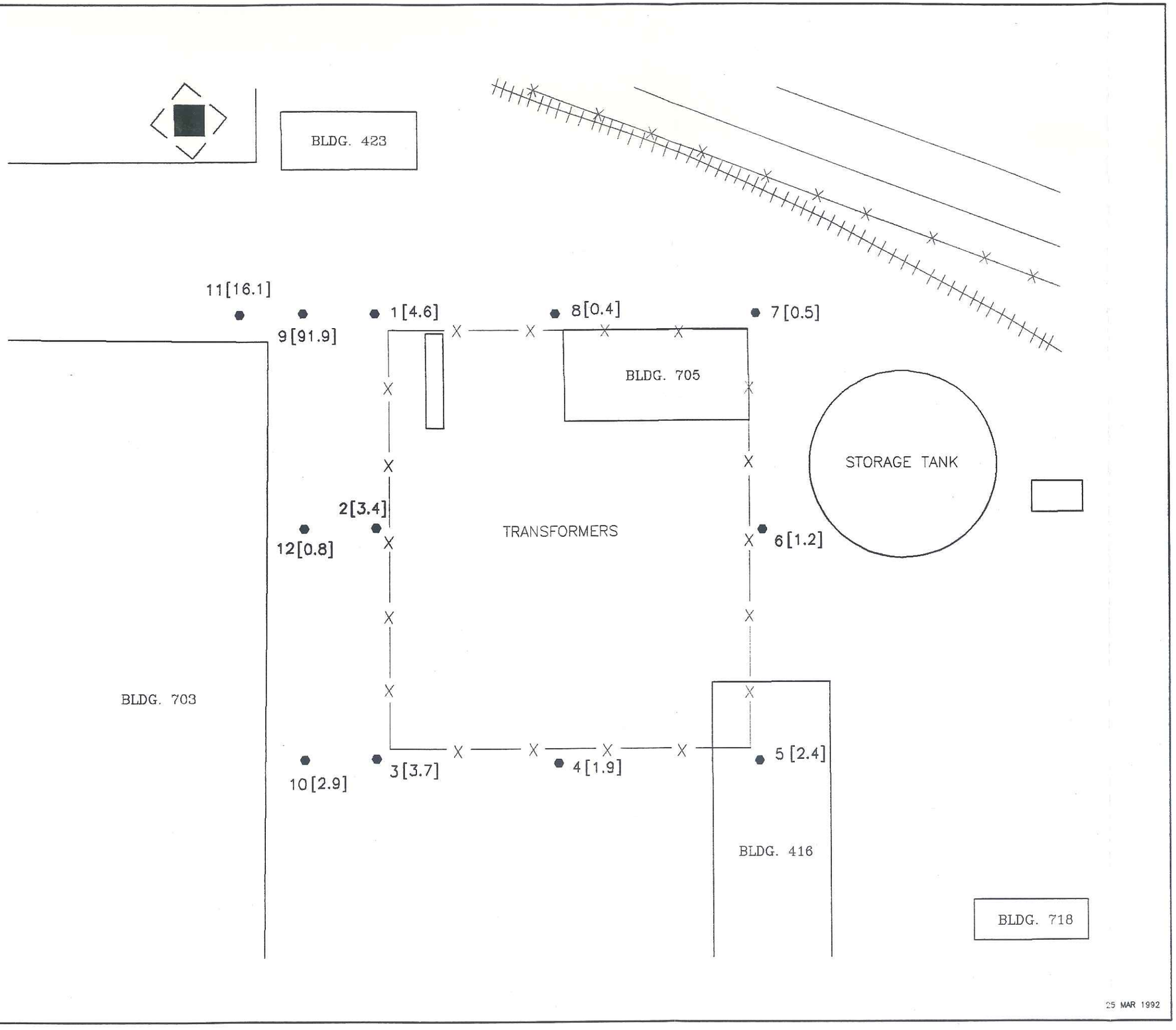
30 0 30

SCALE IN FEET

4603.004.831

O'BRIEN & GERE
ENGINEERS, INC.

GEFIG10 1



GEFIG10 1,2,3,4,5,6

25 MAR 1992

FIGURE 14

G.E. AIRCRAFT ENGINES
EVENDALE, OHIO

LEGEND

- ● SOIL VAPOR SAMPLE LOCATION
- [2.4] TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN PPM
- 5 SAMPLE NUMBER

SOIL VAPOR SURVEY
RESULTS
BLDG. 705
DRUM ACCUMULATION AREA

50 0 50

SCALE IN FEET

4603.004.831

O'BRIEN & GERE
ENGINEERS, INC.

Appendices

O'BRIEN & GERE

APPENDIX A

ELECTRICAL RESISTIVITY SOUNDING DATA

DATA SET: GE1

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: E-W
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 4.242 PERCENT

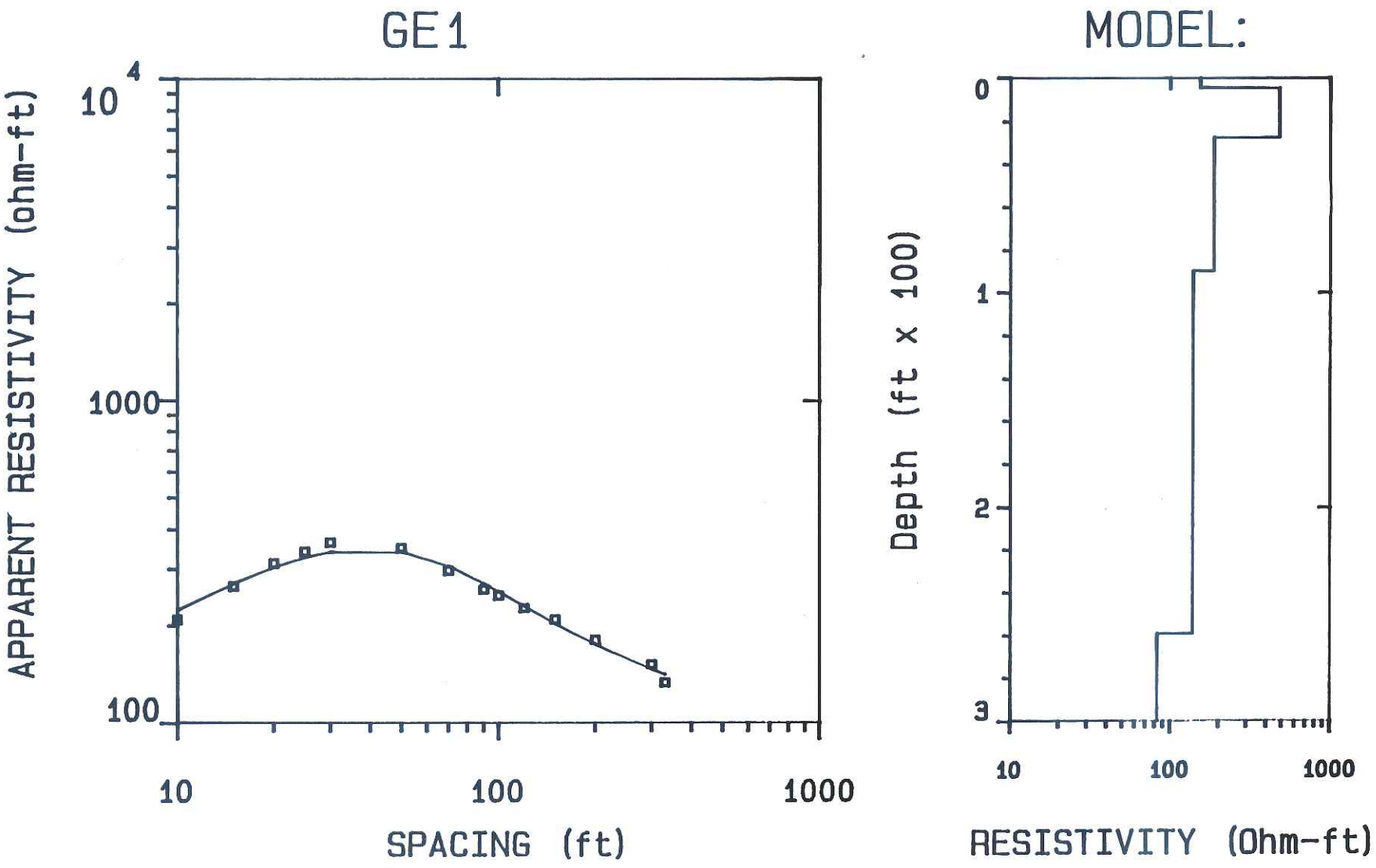
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	152.6	4.64	-4.64	0.0304	709.7
2	481.8	22.88	-27.53	0.0475	11027.9
3	186.1	62.37	-89.90	0.335	11612.5
4	137.7	169.3	-259.2	1.22	23327.8
5	82.65				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	10.00	209.0	224.0	-7.21
2	15.00	266.0	271.6	-2.11
3	20.00	313.0	305.0	2.52
4	25.00	341.0	326.9	4.11
5	30.00	364.0	339.9	6.61
6	50.00	349.0	338.8	2.90
7	70.00	296.0	305.5	-3.23
8	90.00	259.0	270.7	-4.51
9	100.0	248.0	255.4	-2.99
10	120.0	227.0	230.0	-1.32
11	150.0	209.0	202.5	3.06
12	200.0	181.0	174.7	3.46
13	300.0	152.0	146.4	3.65
14	330.0	133.0	140.8	-5.90

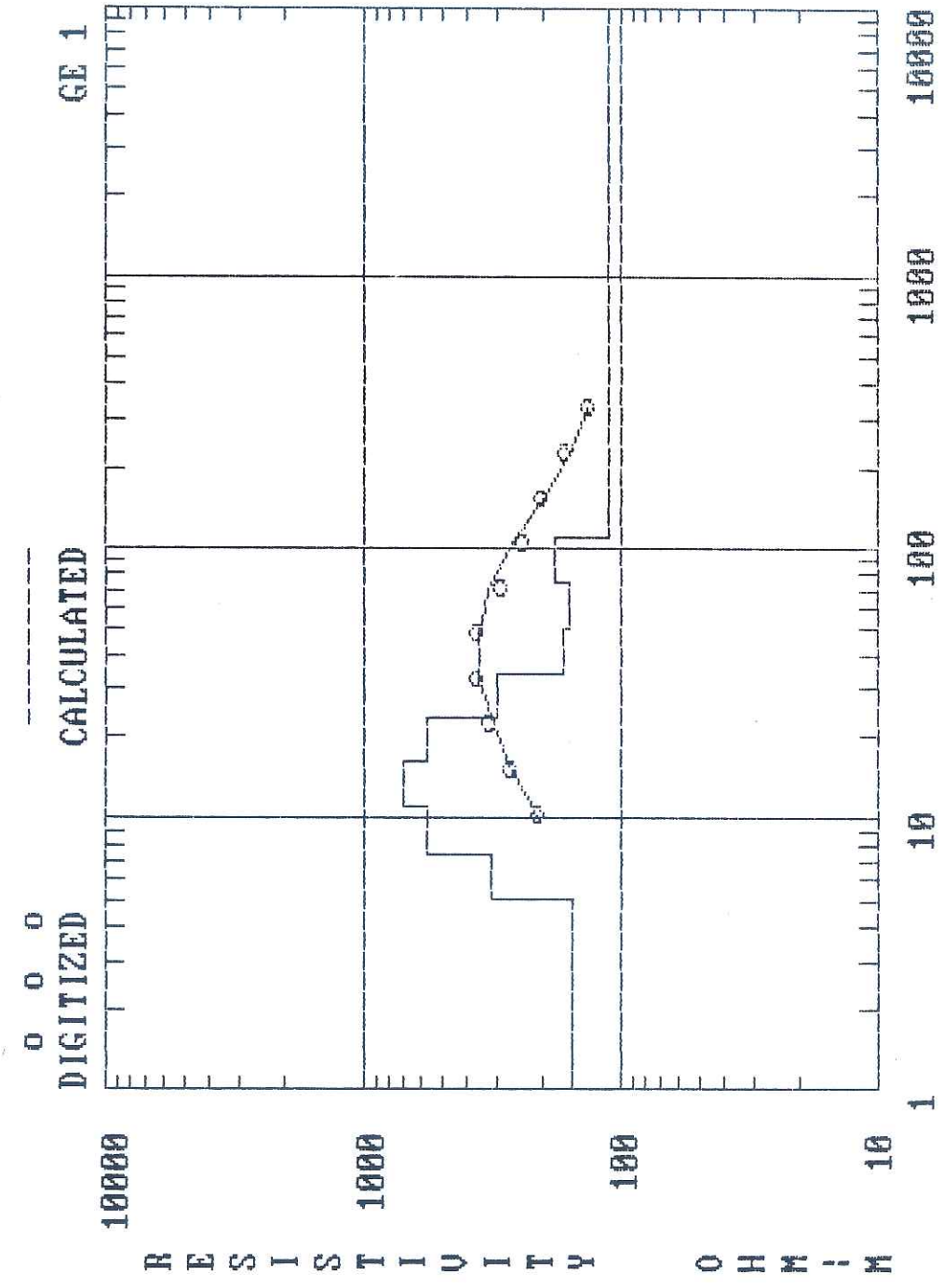
PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.56								
P 2	0.09	0.75							
P 3	-0.03	0.08	0.54						
P 4	0.02	-0.05	0.15	0.65					
P 5	0.00	0.00	-0.01	0.16	0.05				
T 1	-0.37	-0.13	0.08	-0.02	0.00	0.30			
T 2	-0.06	0.23	0.29	-0.01	-0.01	0.10	0.28		
T 3	0.01	-0.02	0.10	0.18	0.04	0.00	0.01	0.06	
T 4	0.00	0.00	0.00	0.12	0.04	0.00	-0.01	0.03	0.03


GE1
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
10
100
1000
RESISTIVITY (Ohm-ft)

GE 1 (INTERPRETATION)

DEPTH	RESIS.	DEPTH	RESIS.
5.07	154.40	34.55	305.00
7.44	319.47	50.72	166.00
10.93	561.23	74.44	159.24
16.04	710.19	109.27	182.18
23.54	570.68	99999.00	111.00



DATA SET: GE2

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: E-W
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 4.506 PERCENT

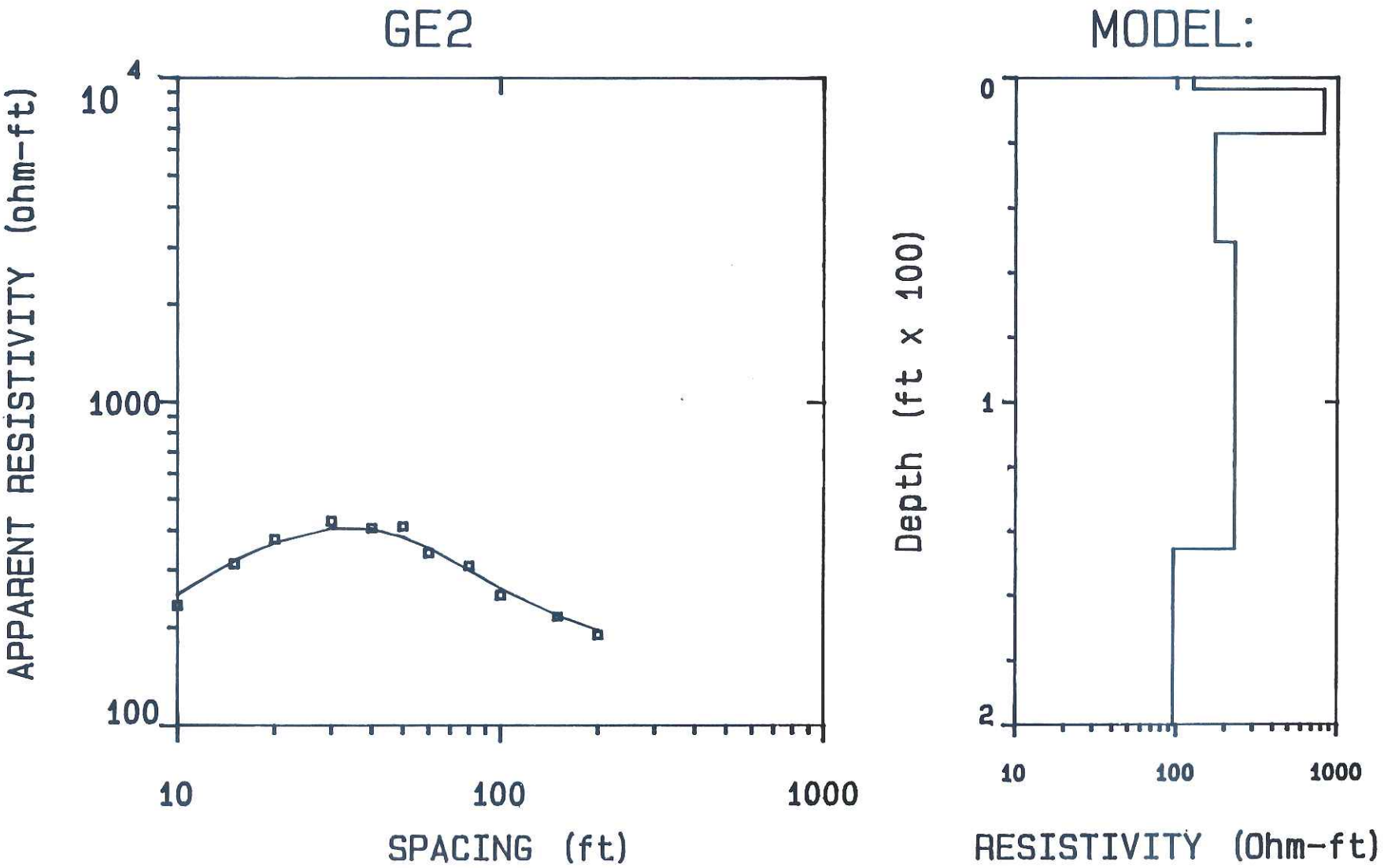
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	125.0	3.62	-3.62	0.0289	453.2
2	819.9	13.57	-17.19	0.0165	11131.7
3	171.3	33.45	-50.65	0.195	5731.7
4	228.9	95.16	-145.8	0.415	21783.3
5	94.99				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	10.00	234.0	252.8	-8.06
2	15.00	314.0	322.1	-2.58
3	20.00	376.0	368.1	2.08
4	30.00	429.0	407.6	4.96
5	40.00	407.0	403.8	0.773
6	50.00	412.0	380.4	7.65
7	60.00	339.0	351.3	-3.64
8	80.00	309.0	298.8	3.27
9	100.0	251.0	262.2	-4.450
10	150.0	216.0	217.1	-0.534
11	200.0	190.0	195.7	-3.03

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.91								
P 2	-0.05	0.89							
P 3	0.00	-0.07	0.62						
P 4	0.00	0.01	0.19	0.79					
P 5	0.00	0.01	-0.07	0.22	0.13				
T 1	-0.16	-0.14	-0.03	0.00	0.01	0.69			
T 2	0.08	0.19	-0.25	-0.08	0.00	0.21	0.63		
T 3	0.01	0.02	-0.15	-0.04	0.04	0.02	0.00	0.05	
T 4	0.00	0.01	-0.06	0.21	0.11	0.01	-0.01	0.04	0.10


GE2
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: GE3

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: c
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 5.074 PERCENT

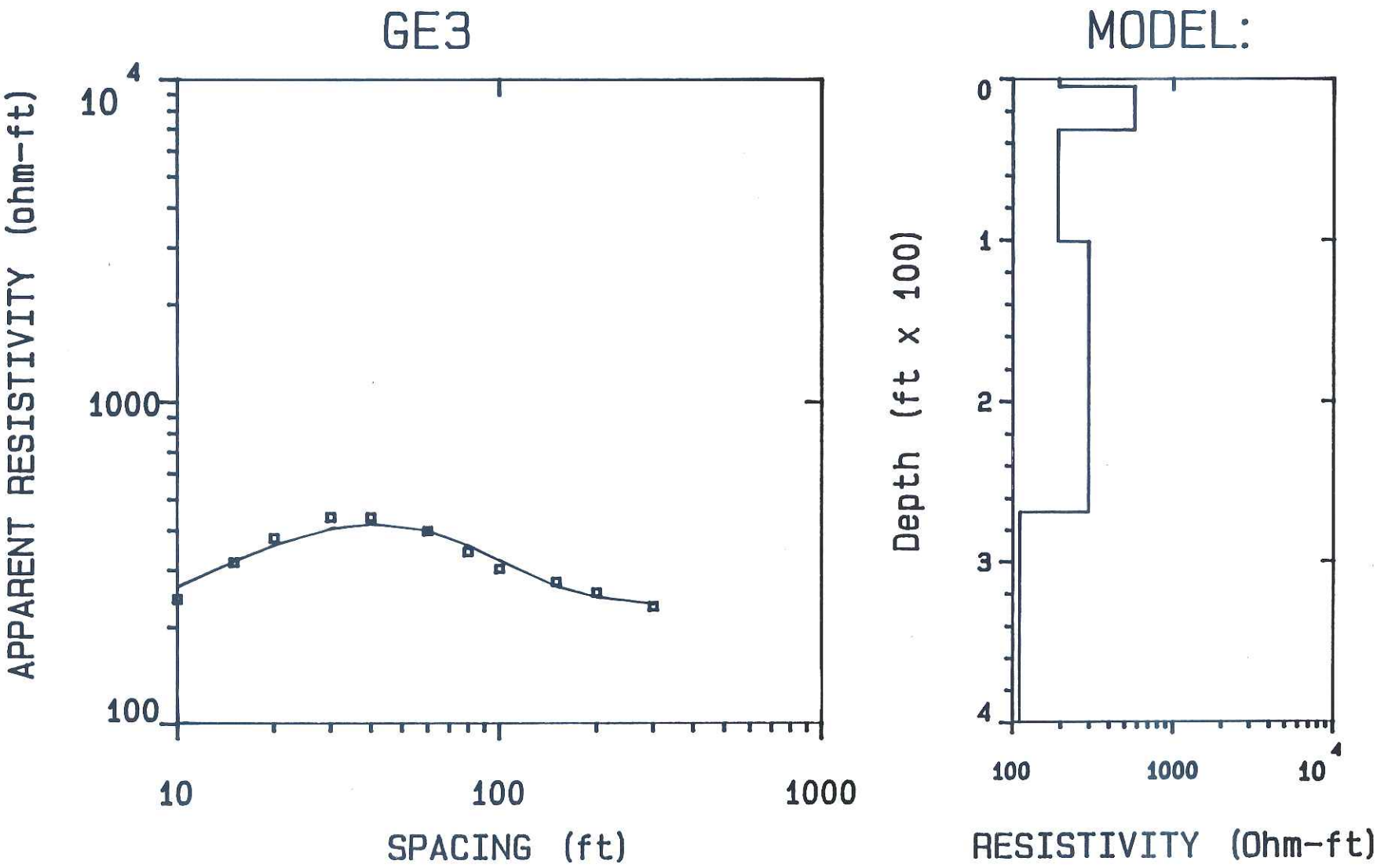
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	192.9	5.12	-5.12	0.0265	988.5
2	570.8	27.18	-32.30	0.0476	15516.6
3	190.1	68.93	-101.2	0.362	13111.1
4	295.5	167.5	-268.7	0.566	49516.9
5	110.6				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	10.00	244.0	266.5	-9.24
2	15.00	318.0	321.1	-0.978
3	20.00	379.0	361.1	4.71
4	30.00	440.0	406.0	7.70
5	40.00	439.0	419.6	4.40
6	60.00	398.0	398.8	-0.218
7	80.00	342.0	358.1	-4.70
8	100.0	302.0	320.6	-6.18
9	150.0	275.0	265.8	3.32
10	200.0	255.0	246.6	3.28
11	300.0	231.0	234.7	-1.62

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.66								
P 2	0.06	0.80							
P 3	-0.01	0.05	0.55						
P 4	0.01	-0.04	0.26	0.44					
P 5	0.00	0.00	0.03	0.09	0.02				
T 1	-0.35	-0.12	0.07	-0.02	-0.01	0.29			
T 2	-0.05	0.23	0.24	-0.05	-0.02	0.12	0.34		
T 3	0.00	0.01	-0.11	-0.08	-0.01	0.00	-0.01	0.03	
T 4	0.00	-0.01	0.05	0.13	0.03	-0.01	-0.02	-0.02	0.04


GE3
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
4
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GE4

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 5.414 PERCENT

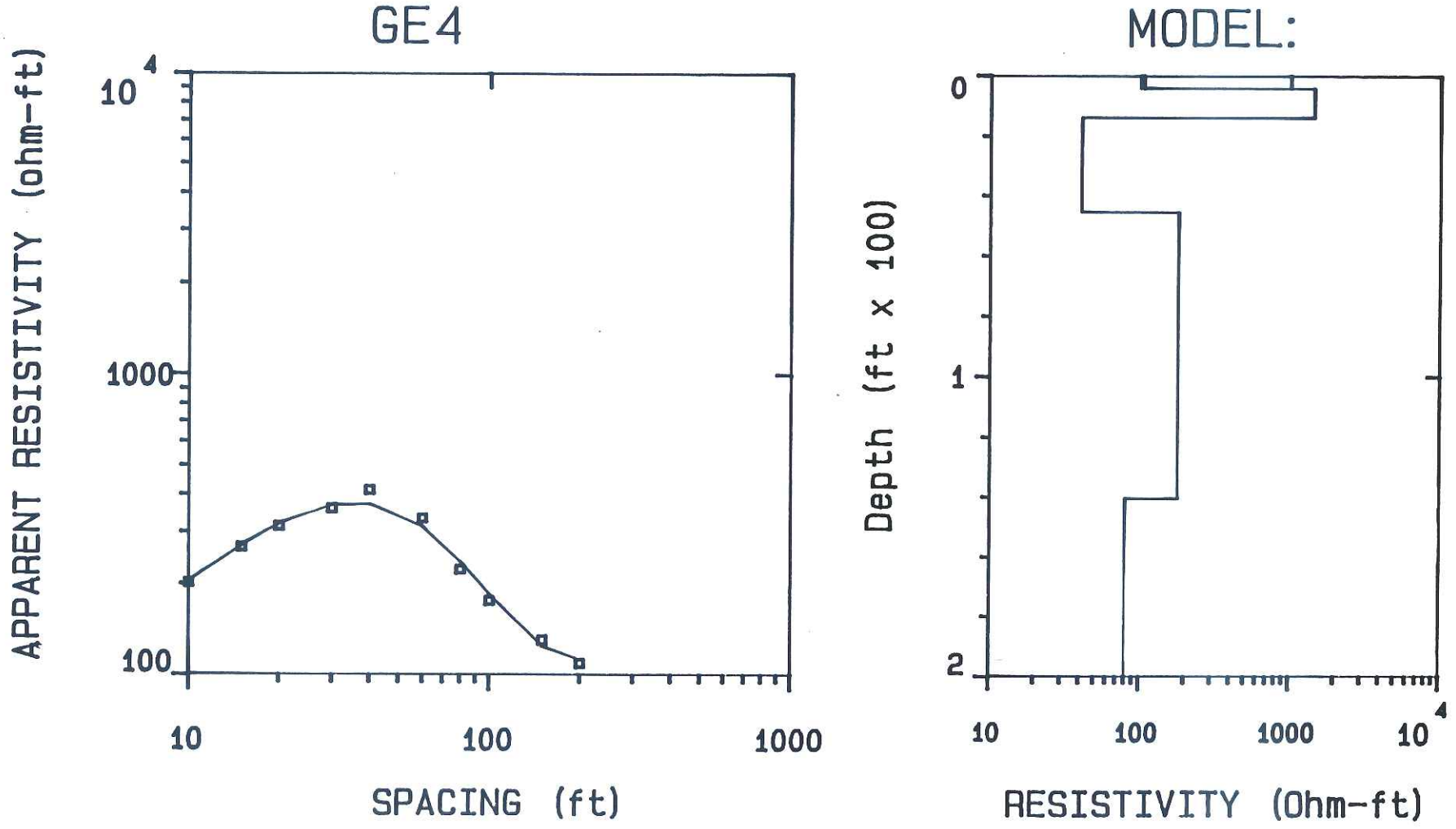
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	103.8	4.28	-4.28	0.0412	445.0
2	1430.1	9.64	-13.93	0.00675	13797.1
3	40.54	31.50	-45.44	0.777	1277.6
4	179.5	95.11	-140.5	0.529	17076.0
5	79.56				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	202.0	205.3	-1.63
2	15.00	268.0	272.4	-1.64
3	20.00	314.0	320.8	-2.17
4	30.00	359.0	369.2	-2.86
5	40.00	415.0	371.2	10.54
6	60.00	332.0	311.3	6.26
7	80.00	224.0	238.9	-6.67
8	100.0	176.0	184.7	-4.97
9	150.0	130.0	124.0	4.59
10	200.0	109.0	111.8	-2.60

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

		P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P	1	0.71								
P	2	-0.03	0.53							
P	3	0.05	0.01	0.46						
P	4	-0.02	0.00	0.21	0.41					
P	5	-0.02	0.01	0.02	0.18	0.09				
T	1	-0.31	-0.09	0.06	-0.03	-0.02	0.66			
T	2	0.02	0.48	0.05	-0.04	-0.02	0.08	0.51		
T	3	-0.02	0.02	-0.37	-0.23	-0.04	-0.02	0.00	0.32	
T	4	-0.01	0.00	0.02	0.15	0.07	-0.02	-0.01	-0.04	0.06


GE4
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GE5

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 2.953 PERCENT

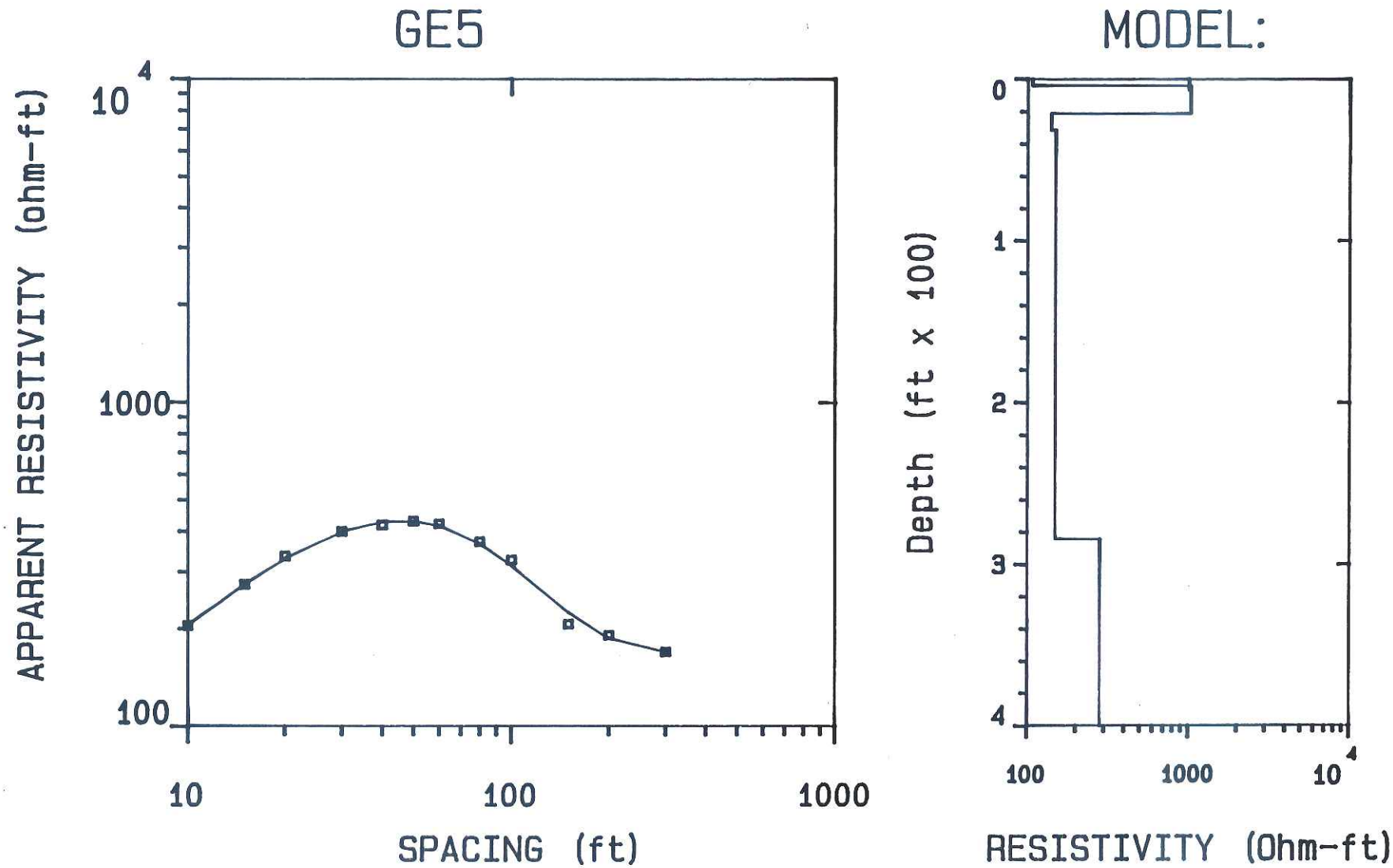
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	107.0	4.30	-4.30	0.0402	460.4
2	1021.9	17.09	-21.39	0.0167	17466.6
3	140.0	10.37	-31.76	0.0740	1452.8
4	148.9	252.6	-284.3	1.69	37626.1
5	281.5				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	205.0	205.9	-0.481
2	15.00	275.0	275.8	-0.304
3	20.00	336.0	330.7	1.54
4	30.00	401.0	401.0	-0.00539
5	40.00	420.0	430.1	-2.42
6	50.00	432.0	431.5	0.103
7	60.00	423.0	416.2	1.59
8	80.00	372.0	365.2	1.81
9	100.0	326.0	312.4	4.14
10	150.0	207.0	224.1	-8.28
11	200.0	191.0	186.4	2.39
12	300.0	170.0	169.5	0.270

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.71								
P 2	-0.09	0.77							
P 3	0.02	0.00	0.04						
P 4	0.01	-0.02	0.02	0.99					
P 5	-0.02	0.05	-0.04	0.06	0.13				
T 1	-0.33	-0.16	0.03	0.00	-0.01	0.60			
T 2	0.09	0.26	0.15	0.02	-0.07	0.16	0.68		
T 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
T 4	0.02	-0.04	0.03	-0.05	-0.11	0.01	0.07	0.00	0.10


GE5
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
4
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GE6

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 3.942 PERCENT

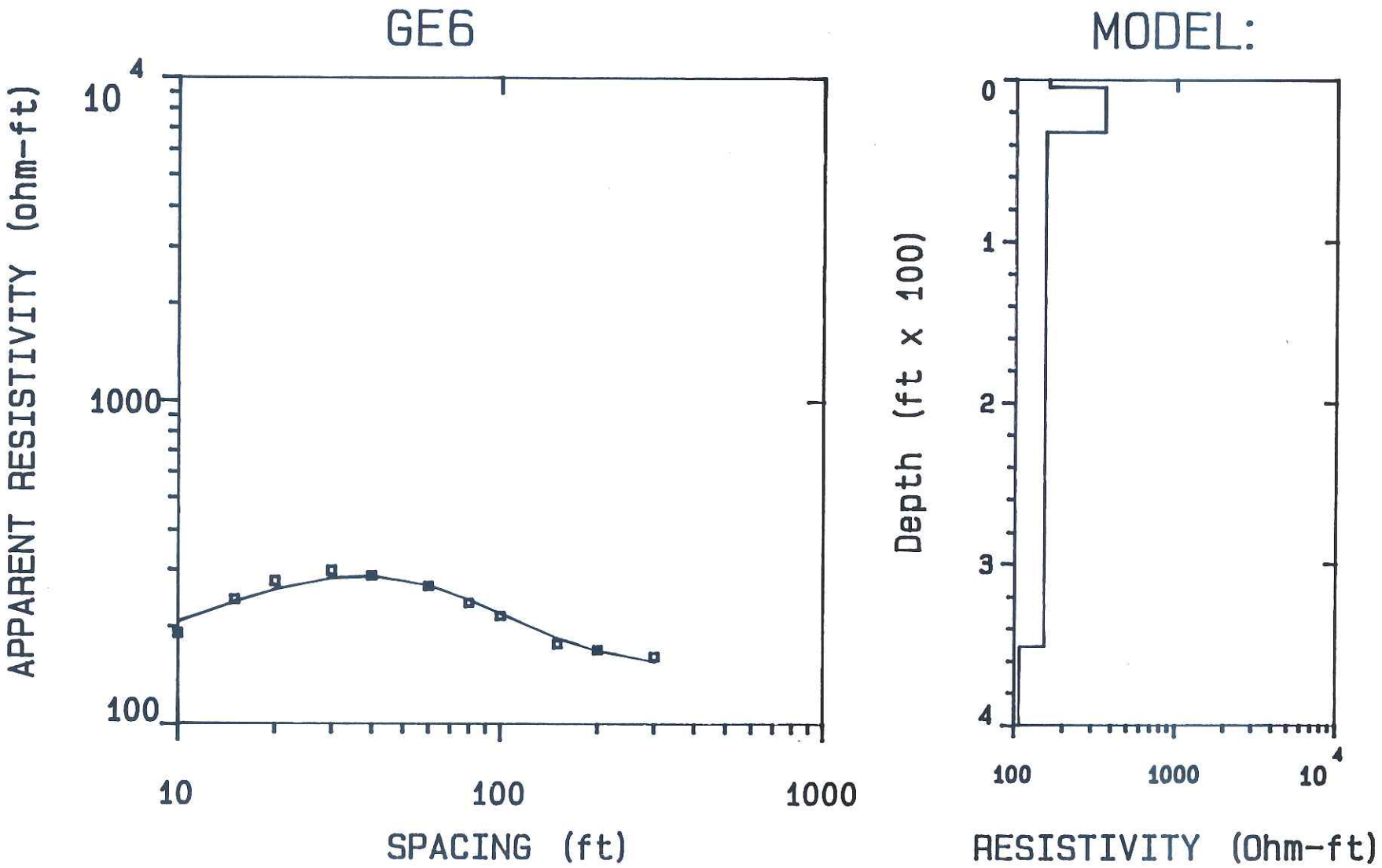
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	159.3	4.91	-4.91	0.0308	783.4
2	355.4	27.40	-32.32	0.0770	9742.1
3	153.6	318.8	-351.1	2.07	48981.0
4	107.8				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	191.0	207.4	-8.62
2	15.00	244.0	240.1	1.59
3	20.00	278.0	262.3	5.61
4	30.00	299.0	284.3	4.90
5	40.00	288.0	287.6	0.135
6	60.00	268.0	269.1	-0.412
7	80.00	238.0	242.5	-1.90
8	100.0	216.0	219.3	-1.56
9	150.0	177.0	183.9	-3.94
10	200.0	170.0	168.3	0.957
11	300.0	162.0	156.3	3.48

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P	1	0.92						
P	2	-0.02	0.98					
P	3	0.00	-0.01	0.99				
P	4	0.01	0.02	0.05	0.13			
T	1	-0.17	-0.07	-0.01	0.04	0.60		
T	2	0.05	0.05	0.03	-0.10	0.16	0.86	
T	3	0.00	0.01	0.04	0.09	0.03	-0.07	0.07
		P 1	P 2	P 3	P 4	T 1	T 2	T 3


GE6
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
4
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GE7

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: a
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: E-W
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 17.218 PERCENT

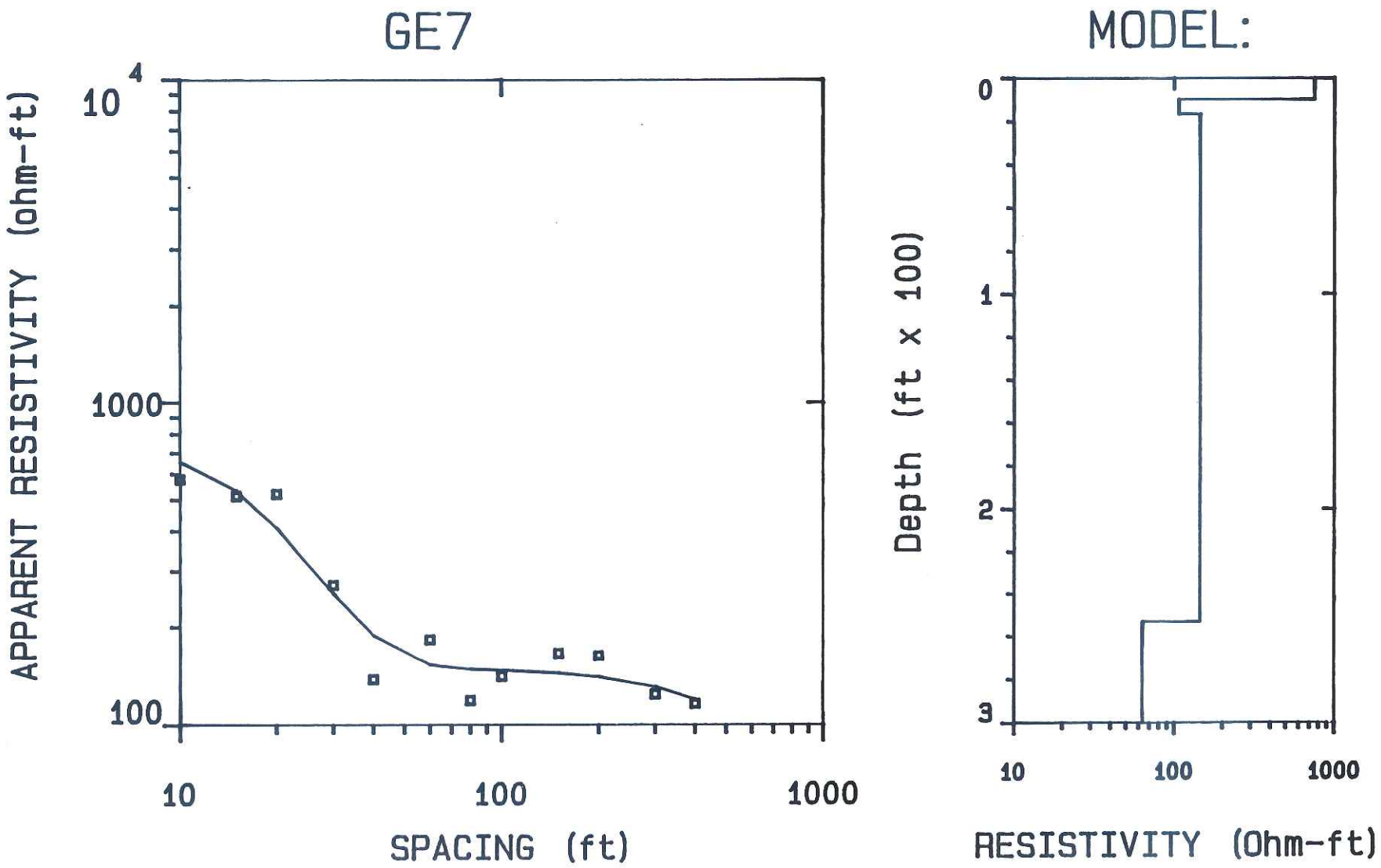
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	746.6	9.81	-9.81	0.0131	7328.5
2	106.0	6.99	-16.81	0.0660	742.0
3	145.0	236.5	-253.4	1.63	34316.4
4	63.00				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	578.0	654.9	-13.32
2	15.00	513.0	530.8	-3.47
3	20.00	521.0	409.9	21.31
4	30.00	271.0	254.6	6.03
5	40.00	138.0	187.8	-36.14
6	60.00	183.0	152.5	16.61
7	80.00	119.0	147.8	-24.21
8	100.0	141.0	146.6	-3.99
9	150.0	166.0	143.5	13.52
10	200.0	163.0	139.9	14.15
11	300.0	124.0	130.6	-5.34
12	400.0	116.0	119.3	-2.89

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.80						
P 2	-0.03	0.09					
P 3	-0.01	0.04	0.94				
P 4	0.01	-0.03	0.04	0.10			
T 1	0.12	0.19	0.02	-0.01	0.82		
T 2	0.01	-0.02	-0.01	0.01	-0.03	0.01	
T 3	0.02	-0.05	0.07	0.15	-0.02	0.03	0.24


GE7
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: GE8

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: E-W
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 15.435 PERCENT

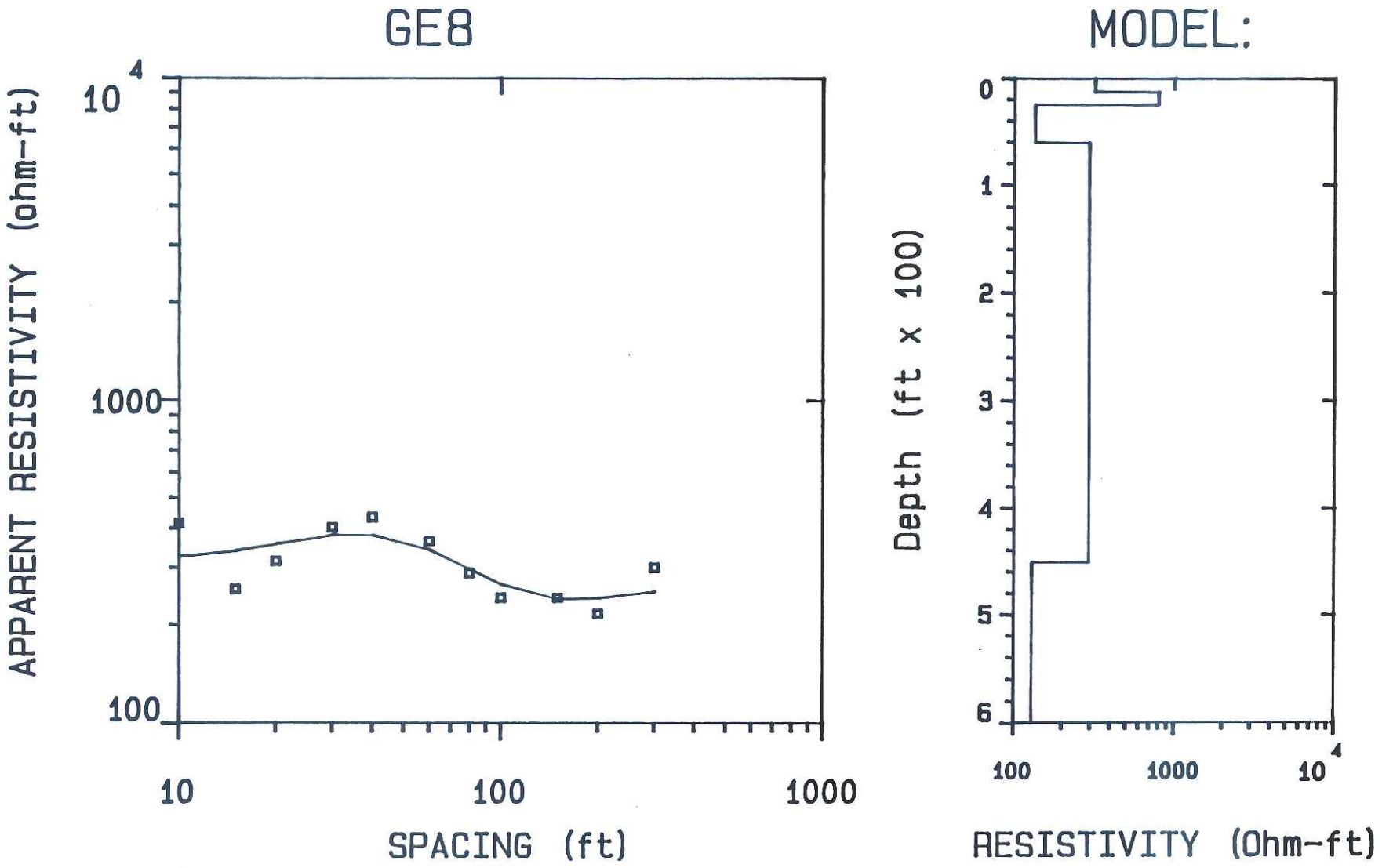
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	316.2	13.11	-13.11	0.0414	4146.5
2	792.4	11.99	-25.10	0.0151	9505.5
3	134.6	35.67	-60.78	0.264	4805.0
4	293.3	390.8	-451.6	1.33	114678.6
5	130.1				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	10.00	416.0	325.8	21.66
2	15.00	258.0	340.5	-31.98
3	20.00	316.0	358.0	-13.31
4	30.00	404.0	381.9	5.45
5	40.00	435.0	381.8	12.21
6	60.00	364.0	341.8	6.08
7	80.00	289.0	297.0	-2.79
8	100.0	243.0	266.6	-9.71
9	150.0	243.0	240.5	0.989
10	200.0	217.0	243.0	-12.01
11	300.0	302.0	255.5	15.39

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.91								
P 2	0.06	0.47							
P 3	0.00	0.19	0.35						
P 4	0.00	-0.04	0.17	0.82					
P 5	0.00	0.00	-0.01	0.03	0.00				
T 1	-0.14	-0.05	0.15	-0.01	0.00	0.33			
T 2	0.01	0.35	0.20	-0.04	0.00	0.06	0.29		
T 3	0.00	-0.01	-0.12	-0.11	0.00	-0.04	-0.02	0.05	
T 4	0.00	0.00	-0.01	0.04	0.00	-0.01	0.00	0.00	0.00


GE8
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
4
5
6
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GE9

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: E-W
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 8.463 PERCENT

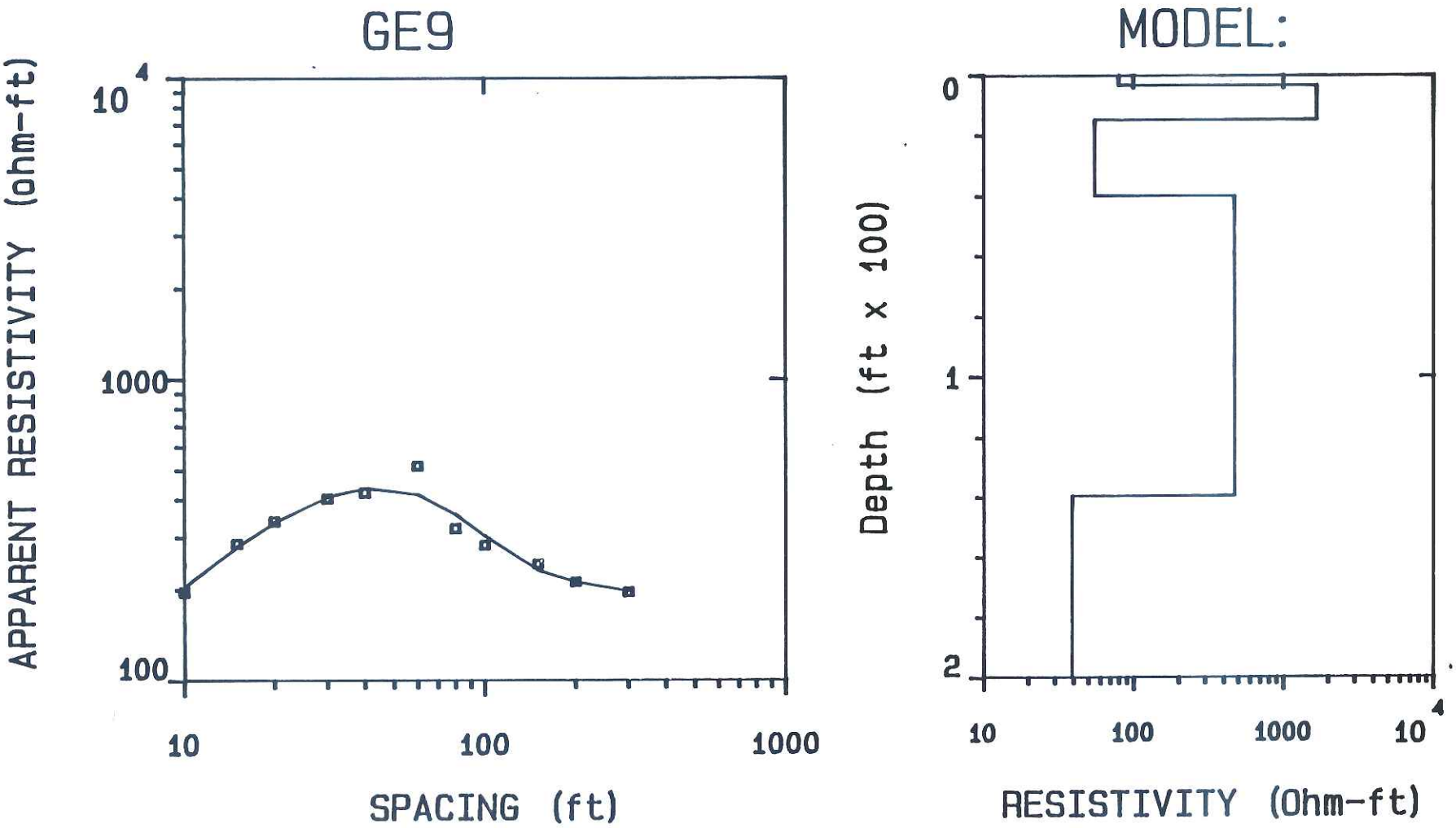
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	79.18	3.34	-3.34	0.0422	265.0
2	1664.5	11.44	-14.79	0.00688	19052.8
3	54.75	25.16	-39.95	0.459	1377.9
4	468.6	99.61	-139.5	0.212	46688.9
5	38.80				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	10.00	197.0	204.6	-3.88
2	15.00	286.0	279.7	2.18
3	20.00	340.0	337.5	0.726
4	30.00	404.0	409.9	-1.46
5	40.00	422.0	437.3	-3.64
6	60.00	519.0	414.4	20.14
7	80.00	321.0	356.3	-11.00
8	100.0	282.0	302.9	-7.43
9	150.0	243.0	231.3	4.78
10	200.0	212.0	211.4	0.257
11	300.0	196.0	196.8	-0.432

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.54								
P 2	-0.02	0.57							
P 3	0.02	0.00	0.48						
P 4	-0.01	0.00	0.09	0.55					
P 5	0.00	0.00	-0.02	0.09	0.02				
T 1	-0.47	-0.07	0.03	-0.01	0.00	0.51			
T 2	-0.01	0.44	0.05	-0.02	0.00	0.05	0.53		
T 3	-0.02	0.02	-0.46	-0.09	0.02	-0.02	0.01	0.46	
T 4	-0.01	0.00	-0.06	0.46	0.09	-0.01	0.00	0.07	0.44


GE9
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GE10

CLIENT: General Electric
LOCATION: North Landfill
COUNTY: o
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 3
AZIMUTH: E-W
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 1.252 PERCENT

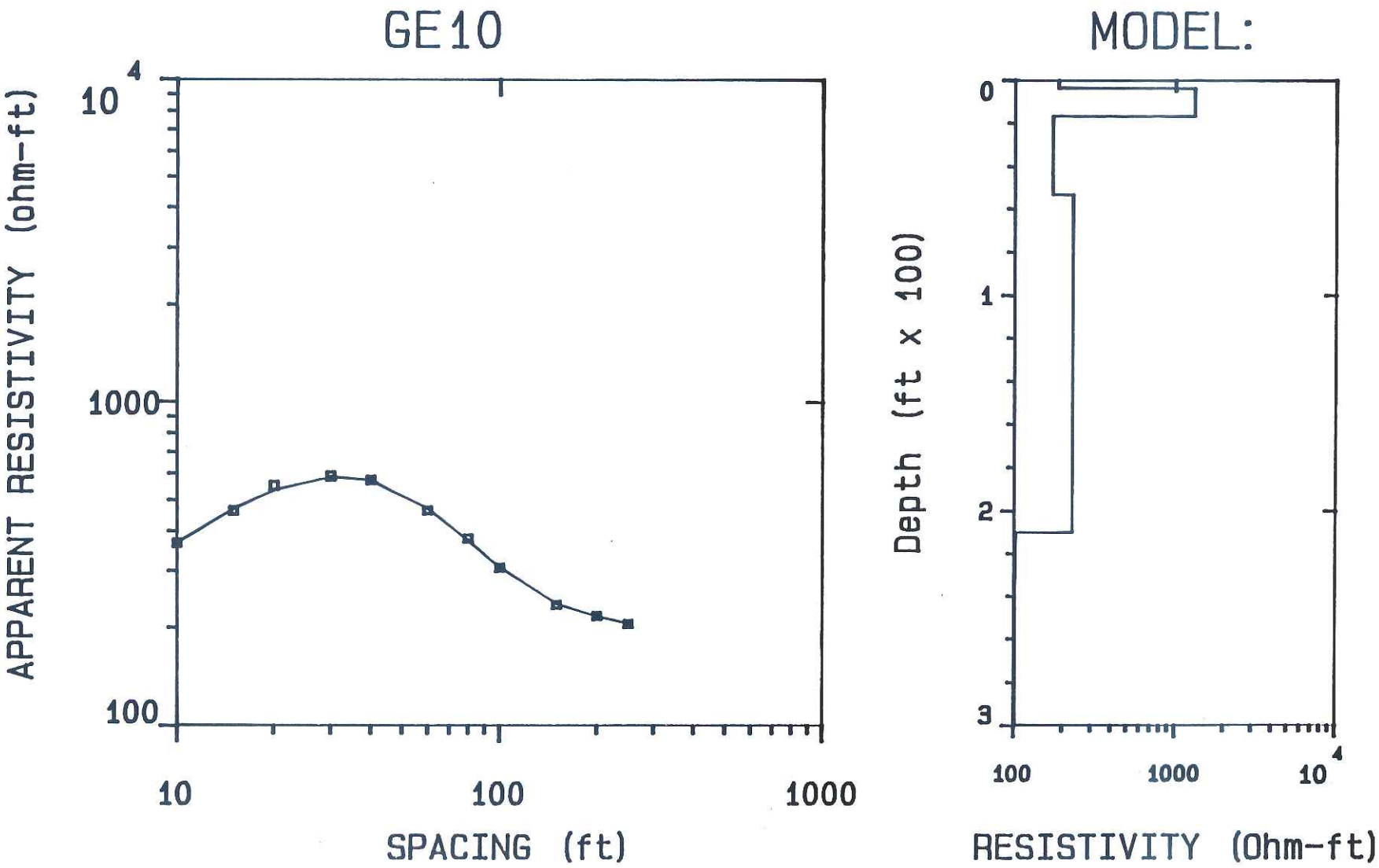
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	184.9	3.76	-3.76	0.0203	696.8
2	1307.7	13.03	-16.80	0.00997	17050.0
3	171.7	36.76	-53.56	0.214	6313.0
4	230.2	156.5	-210.1	0.679	36040.7
5	102.0				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	10.00	367.0	368.0	-0.297
2	15.00	463.0	470.2	-1.55
3	20.00	553.0	537.0	2.88
4	30.00	591.0	588.8	0.365
5	40.00	574.0	572.0	0.339
6	60.00	463.0	469.2	-1.34
7	80.00	379.0	372.2	1.77
8	100.0	306.0	307.0	-0.328
9	150.0	235.0	236.4	-0.632
10	200.0	217.0	216.1	0.408
11	250.0	205.0	205.6	-0.293

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.63								
P 2	-0.06	0.77							
P 3	0.05	-0.07	0.74						
P 4	-0.01	0.02	0.11	0.90					
P 5	0.00	0.00	-0.10	0.13	0.11				
T 1	-0.42	-0.14	0.04	-0.01	0.00	0.50			
T 2	0.05	0.28	0.17	-0.06	0.04	0.14	0.61		
T 3	0.00	0.00	-0.19	-0.04	0.07	0.01	0.04	0.08	
T 4	0.00	-0.01	-0.14	0.19	0.14	0.00	0.05	0.09	0.19


GE10
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: GENERAL1

CLIENT: General Electric
LOCATION: Trash Pile Area
COUNTY: 0
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: 0
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 6.679 PERCENT

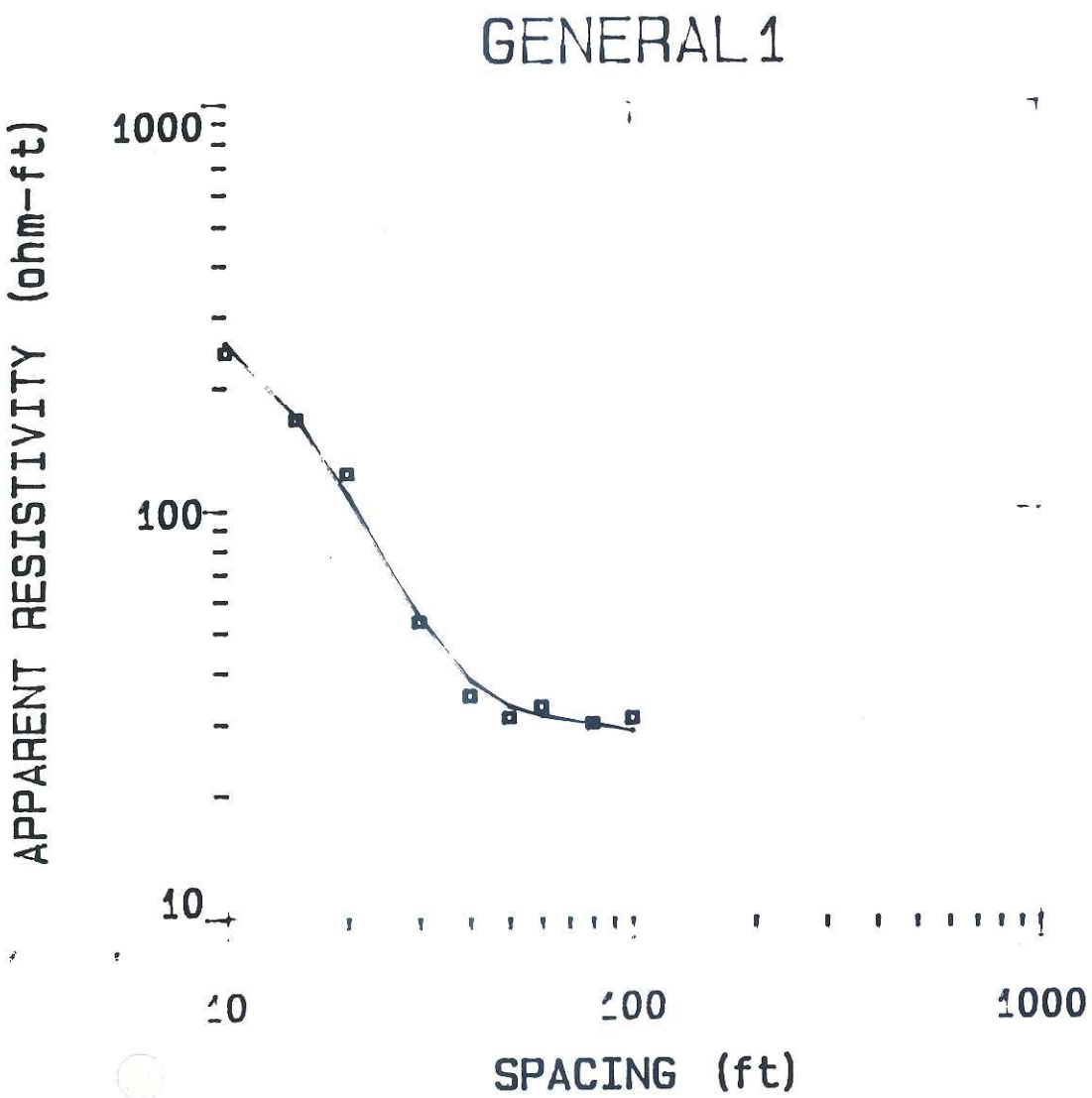
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	362.9	6.36	-6.36	0.0175	2310.2
2	81.61	4.95	-11.32	0.0607	404.6
3	29.31	109.4	-120.8	3.73	3208.8
4	11.05				

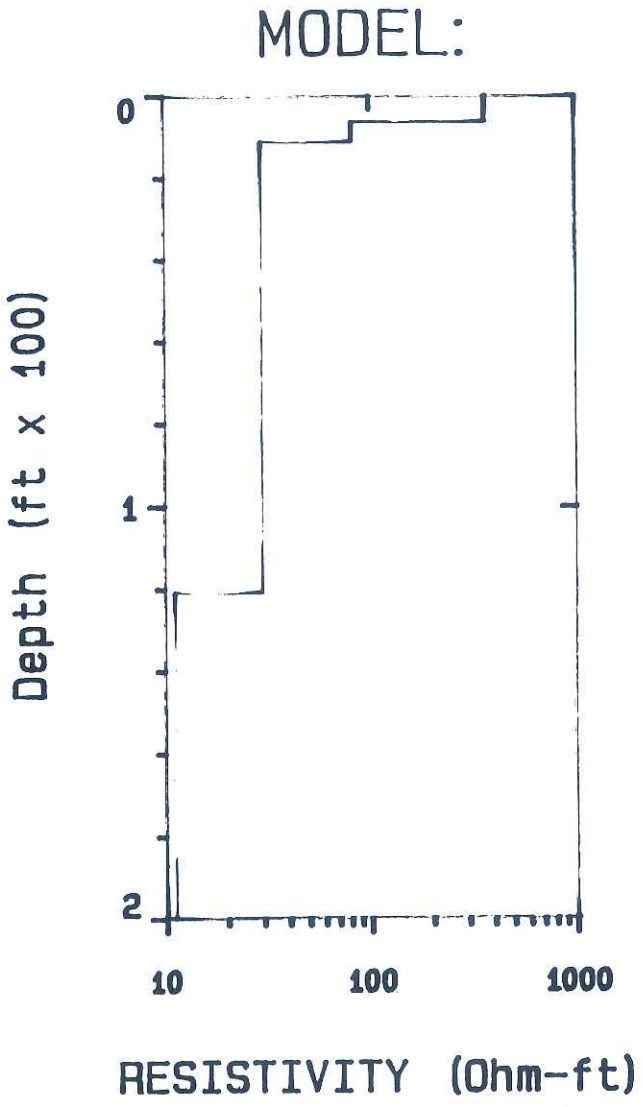
ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	244.0	257.6	-5.61
2	15.00	167.0	169.4	-1.46
3	20.00	123.0	109.5	10.96
4	30.00	53.00	54.71	-3.23
5	40.00	35.00	38.10	-8.87
6	50.00	31.00	33.06	-6.65
7	60.00	33.00	31.33	5.03
8	80.00	30.00	29.90	0.325
9	100.0	31.00	28.71	7.37

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.69						
P 2	-0.01	0.05					
P 3	-0.03	0.01	0.92				
P 4	0.01	0.00	0.02	0.01			
T 1	0.13	0.20	0.03	-0.01	0.83		
T 2	-0.09	0.05	0.07	-0.01	0.15	0.09	
T 3	0.02	-0.01	0.06	0.01	-0.02	-0.03	0.03


GENERAL 1
APPARENT RESISTIVITY (ohm-ft)
1000
100
10
10
100
1000
SPACING (ft)


MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: GENERAL2

CLIENT: General Electric
LOCATION: Trash Pile Area
COUNTY: 0
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: 0
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 79.531 PERCENT

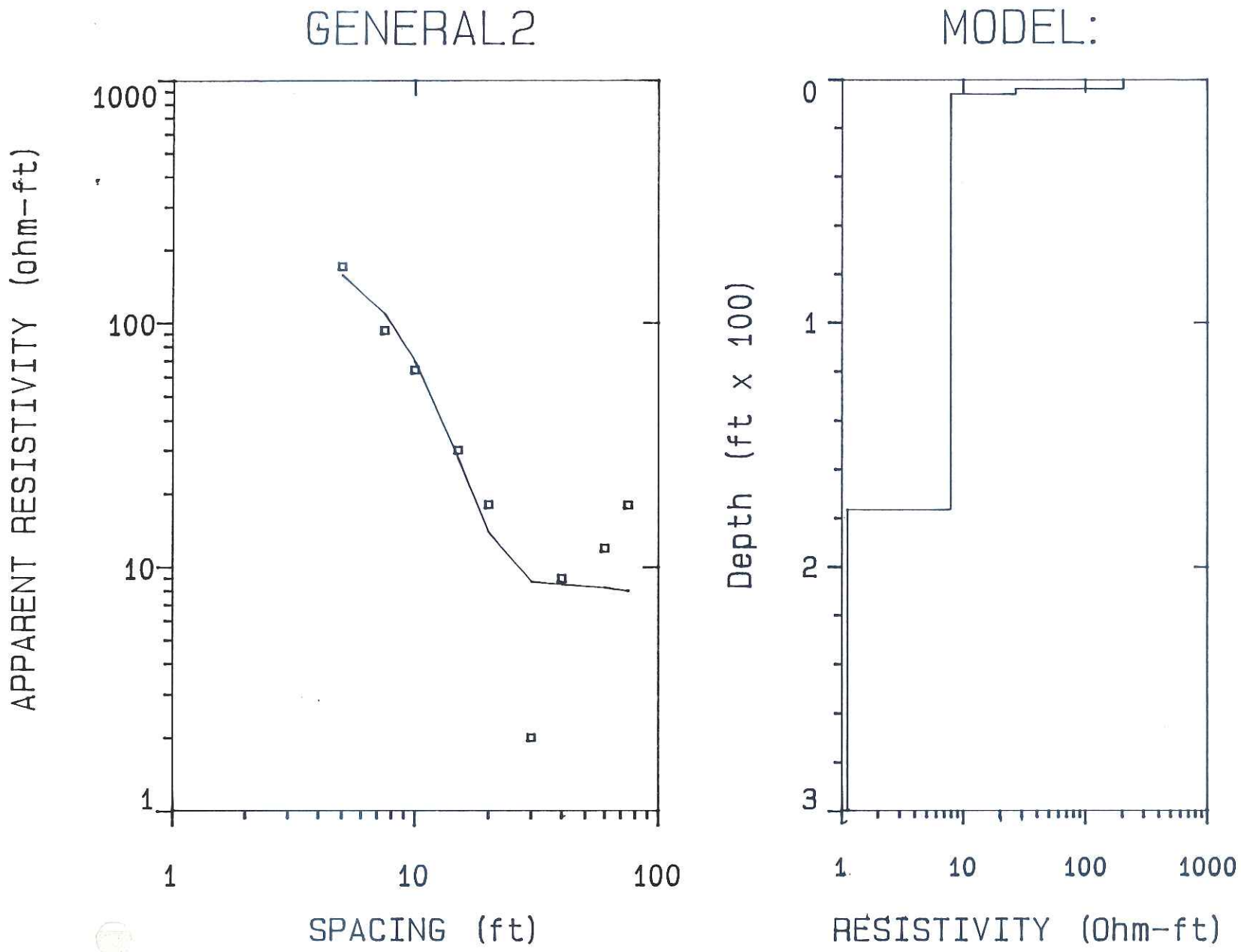
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	202.0	3.97	-3.97	0.0196	803.6
2	26.38	2.07	-6.05	0.0788	54.87
3	7.86	170.6	-176.6	21.67	1342.6
4	1.10				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	5.00	171.0	157.6	7.78
2	7.50	93.00	108.7	-16.94
3	10.00	64.00	69.25	-8.21
4	15.00	30.00	27.76	7.45
5	20.00	18.00	13.85	23.02
6	30.00	2.00	8.67	-333.5
7	40.00	9.00	8.43	6.31
8	60.00	12.00	8.18	31.78
9	75.00	18.00	7.94	55.84

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.73						
P 2	0.00	0.01					
P 3	-0.02	0.00	0.89				
P 4	0.00	0.00	0.00	0.00			
T 1	0.09	0.09	0.03	0.00	0.92		
T 2	-0.04	0.01	0.03	0.00	0.09	0.02	
T 3	0.00	0.00	0.02	0.00	0.00	0.00	0.00
	P 1	P 2	P 3	P 4	T 1	T 2	T 3


GENERAL2
APPARENT RESISTIVITY (ohm-ft)
1000
100
10
1
1
10
100
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
3
1
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: GENERAL3

CLIENT: General Electric
LOCATION: Trash Pile Area
COUNTY: 0
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: 0
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 4.710 PERCENT

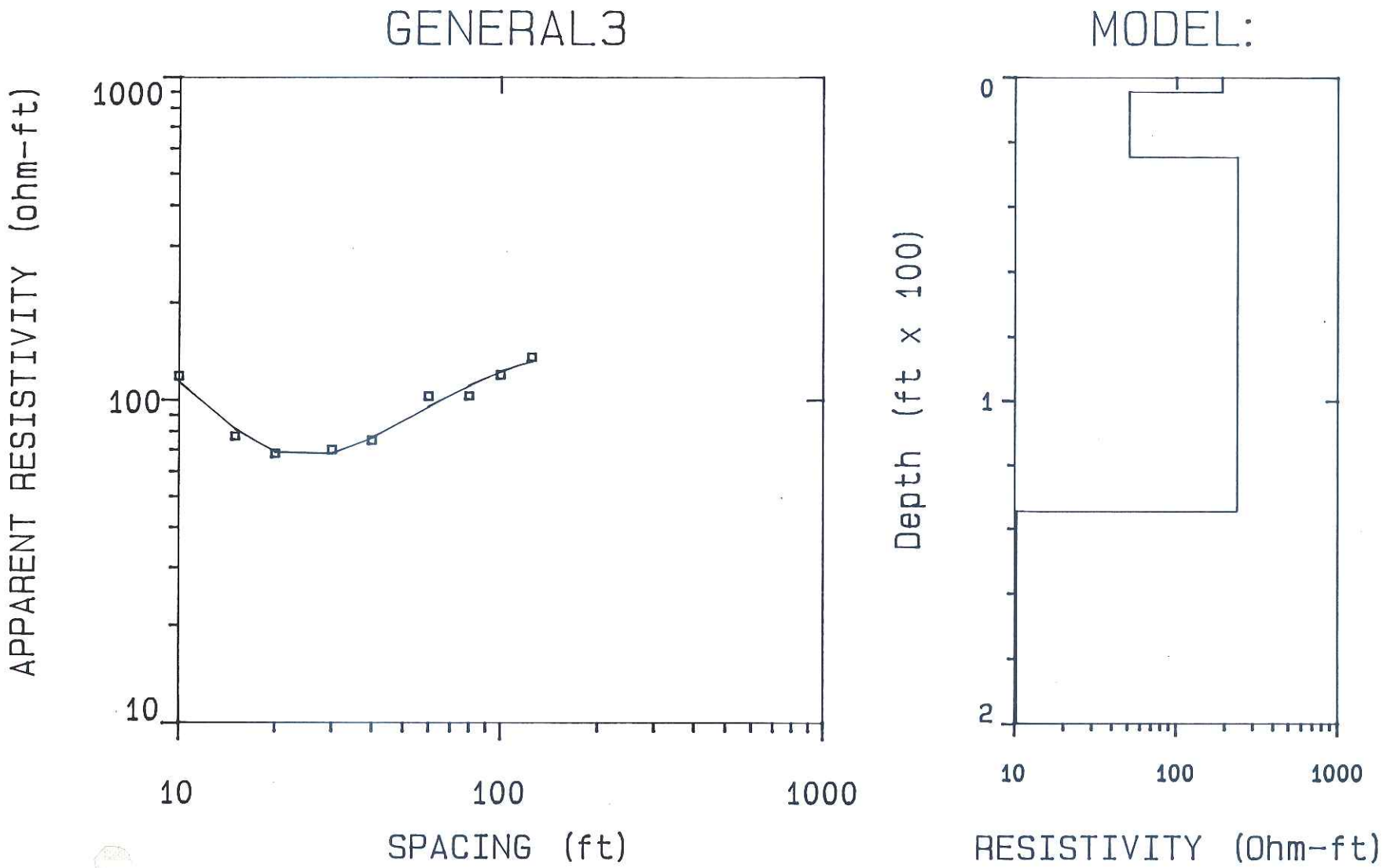
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	190.4	4.54	-4.54	0.0238	864.9
2	50.47	20.24	-24.78	0.401	1021.8
3	238.3	109.9	-134.6	0.461	26193.0
4	10.24				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	119.0	113.4	4.67
2	15.00	77.00	80.98	-5.17
3	20.00	68.00	68.48	-0.716
4	30.00	70.00	67.73	3.23
5	40.00	75.00	76.33	-1.77
6	60.00	103.0	95.61	7.17
7	80.00	103.0	111.1	-7.96
8	100.0	120.0	122.6	-2.24
9	125.0	136.0	132.0	2.91

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.47						
P 2	-0.03	0.75					
P 3	0.04	0.02	0.46				
P 4	0.00	0.00	0.01	0.00			
T 1	0.29	0.18	-0.06	0.00	0.63		
T 2	-0.04	-0.28	-0.24	0.00	0.18	0.43	
T 3	0.01	-0.02	0.16	0.00	0.01	-0.04	0.07
	P 1	P 2	P 3	P 4	T 1	T 2	T 3


GENERAL3
APPARENT RESISTIVITY (ohm-ft)
1000
100
10
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: READING1

CLIENT: General Electric
LOCATION: Reading Rd. Landfill
COUNTY: 0
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 5.254 PERCENT

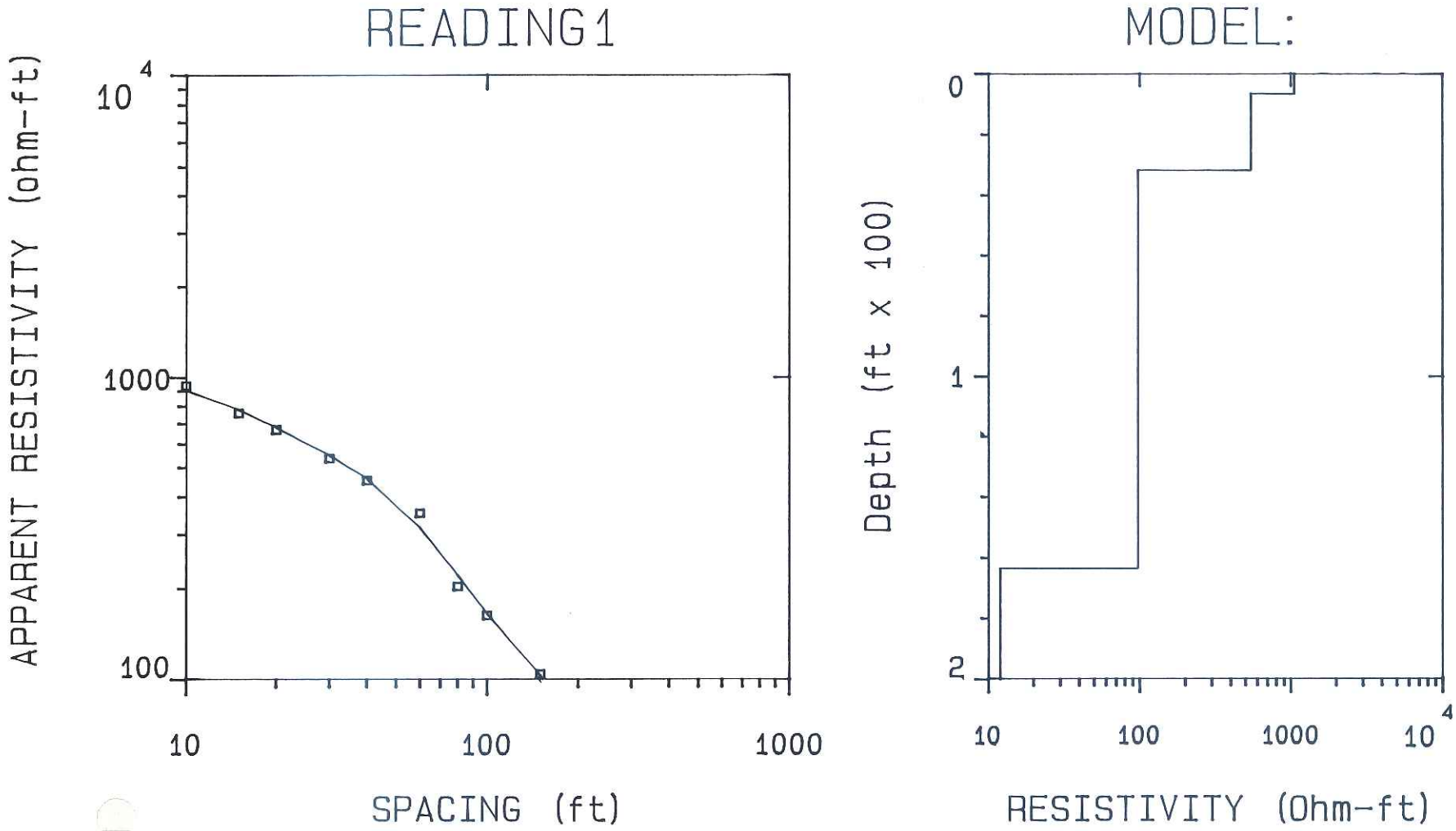
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	1045.9	6.63	-6.63	0.00634	6936.6
2	539.6	25.06	-31.69	0.0464	13526.7
3	96.34	131.9	-163.6	1.36	12712.7
4	11.90				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	939.0	904.4	3.67
2	15.00	757.0	775.7	-2.47
3	20.00	667.0	676.9	-1.49
4	30.00	535.0	548.0	-2.43
5	40.00	451.0	455.9	-1.09
6	60.00	353.0	314.1	11.01
7	80.00	203.0	220.3	-8.53
8	100.0	162.0	163.7	-1.06
9	150.0	104.0	102.4	1.53

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.74						
P 2	0.01	0.73					
P 3	0.00	-0.08	0.59				
P 4	0.00	0.00	0.02	0.00			
T 1	0.21	0.27	0.05	0.00	0.23		
T 2	-0.09	0.16	0.24	0.00	0.03	0.69	
T 3	0.01	-0.03	0.19	0.01	0.01	-0.02	0.09
	P 1	P 2	P 3	P 4	T 1	T 2	T 3


READING1
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: READING2

CLIENT: General Electric
LOCATION: Reading Rd. Landfill
COUNTY: O
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: O
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 40.116 PERCENT

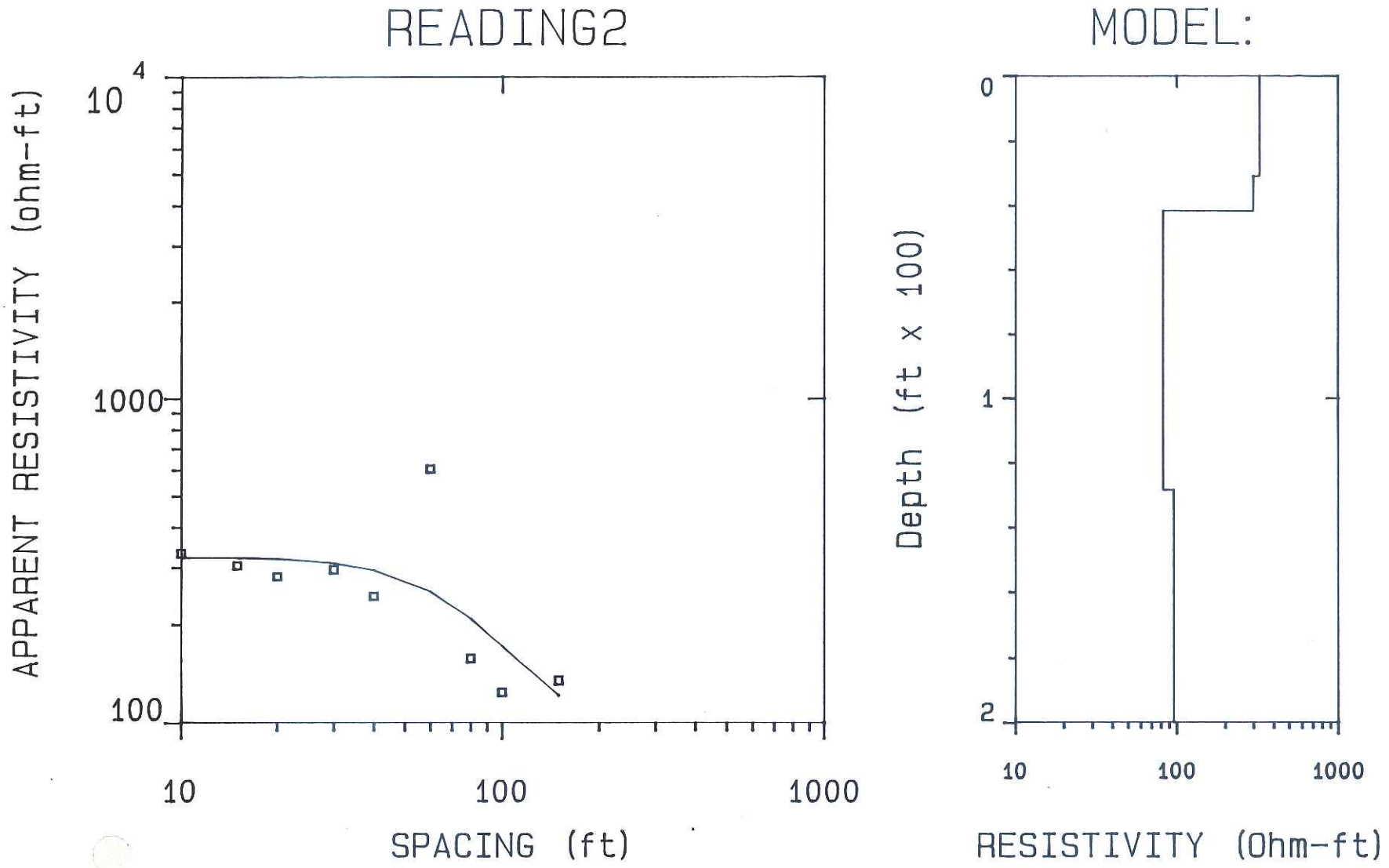
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	324.5	31.04	-31.04	0.0956	10076.4
2	296.9	10.72	-41.77	0.0361	3185.7
3	81.54	86.71	-128.4	1.06	7070.7
4	94.96				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	333.0	323.5	2.83
2	15.00	304.0	322.0	-5.93
3	20.00	281.0	319.0	-13.54
4	30.00	296.0	309.2	-4.48
5	40.00	244.0	293.8	-20.41
6	60.00	606.0	251.1	58.55
7	80.00	158.0	207.2	-31.19
8	100.0	124.0	171.6	-38.40
9	150.0	135.0	120.9	10.41

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.97						
P 2	0.02	0.11					
P 3	-0.02	0.09	0.42				
P 4	-0.01	0.00	0.11	0.04			
T 1	0.03	0.23	0.30	0.03	0.53		
T 2	0.01	0.07	0.09	0.01	0.17	0.05	
T 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P 1	P 2	P 3	P 4	T 1	T 2	T 3


READING2
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: READING3

CLIENT: General Electric
LOCATION: Reading Rd. Landfill
COUNTY: O
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: O
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 5.783 PERCENT

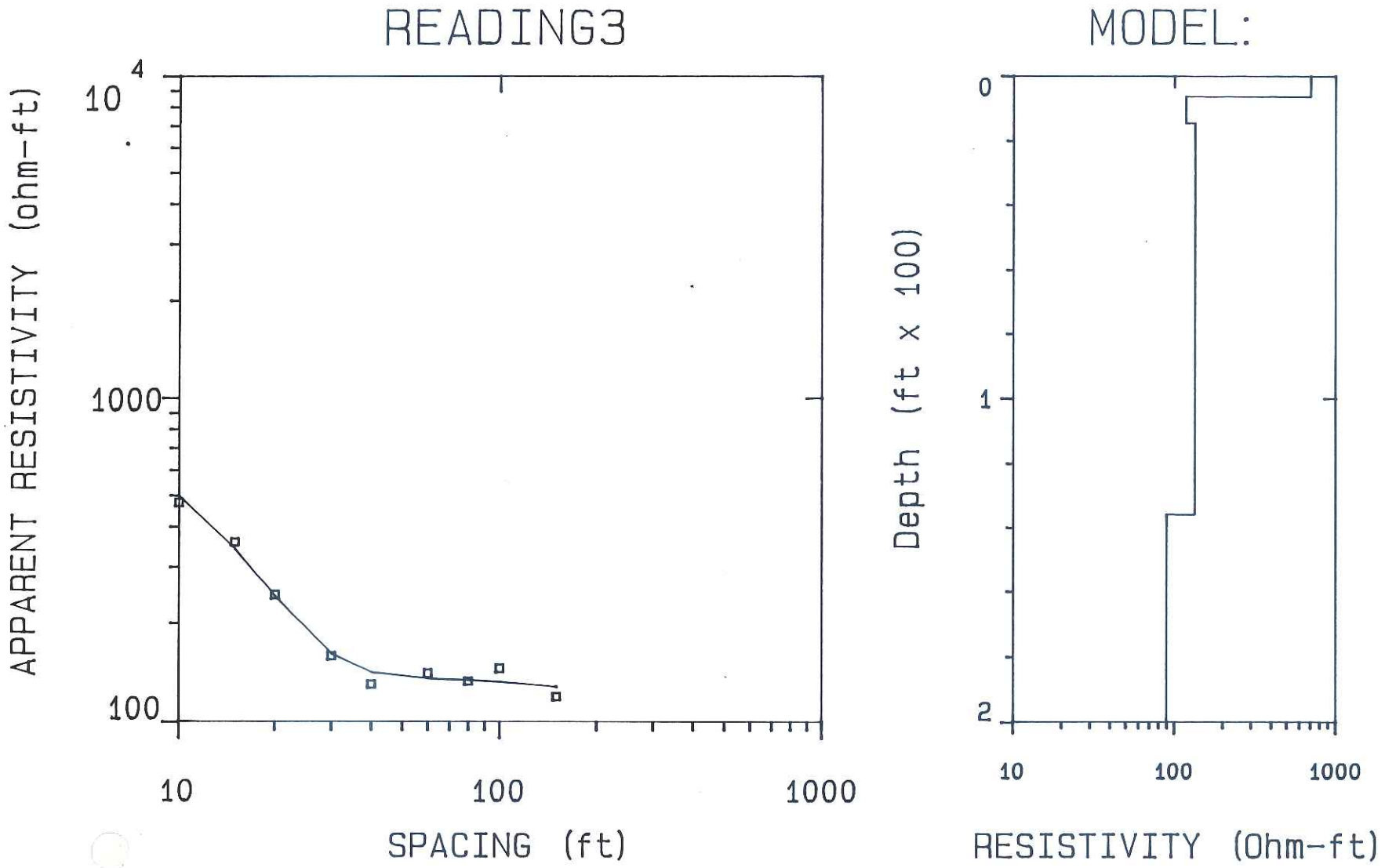
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	695.5	6.50	-6.50	0.00936	4527.5
2	116.2	8.19	-14.70	0.0705	952.5
3	133.1	121.2	-135.9	0.910	16137.4
4	88.83				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	476.0	498.2	-4.67
2	15.00	358.0	340.4	4.89
3	20.00	244.0	241.4	1.03
4	30.00	159.0	161.2	-1.42
5	40.00	130.0	141.3	-8.75
6	60.00	141.0	135.2	4.09
7	80.00	133.0	133.6	-0.523
8	100.0	146.0	132.0	9.57
9	150.0	119.0	127.3	-7.00

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.67						
P 2	-0.09	0.27					
P 3	-0.01	0.08	0.93				
P 4	0.01	-0.03	0.05	0.03			
T 1	0.19	0.26	0.00	0.00	0.77		
T 2	0.01	-0.02	-0.01	0.01	-0.01	0.00	
T 3	0.01	-0.03	0.04	0.02	0.00	0.00	0.02
	P 1	P 2	P 3	P 4	T 1	T 2	T 3


READING3
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: READING4

CLIENT: General Electric
LOCATION: Reading Rd. Landfill
COUNTY: 0
PROJECT: GE- Evandale RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 23.349 PERCENT

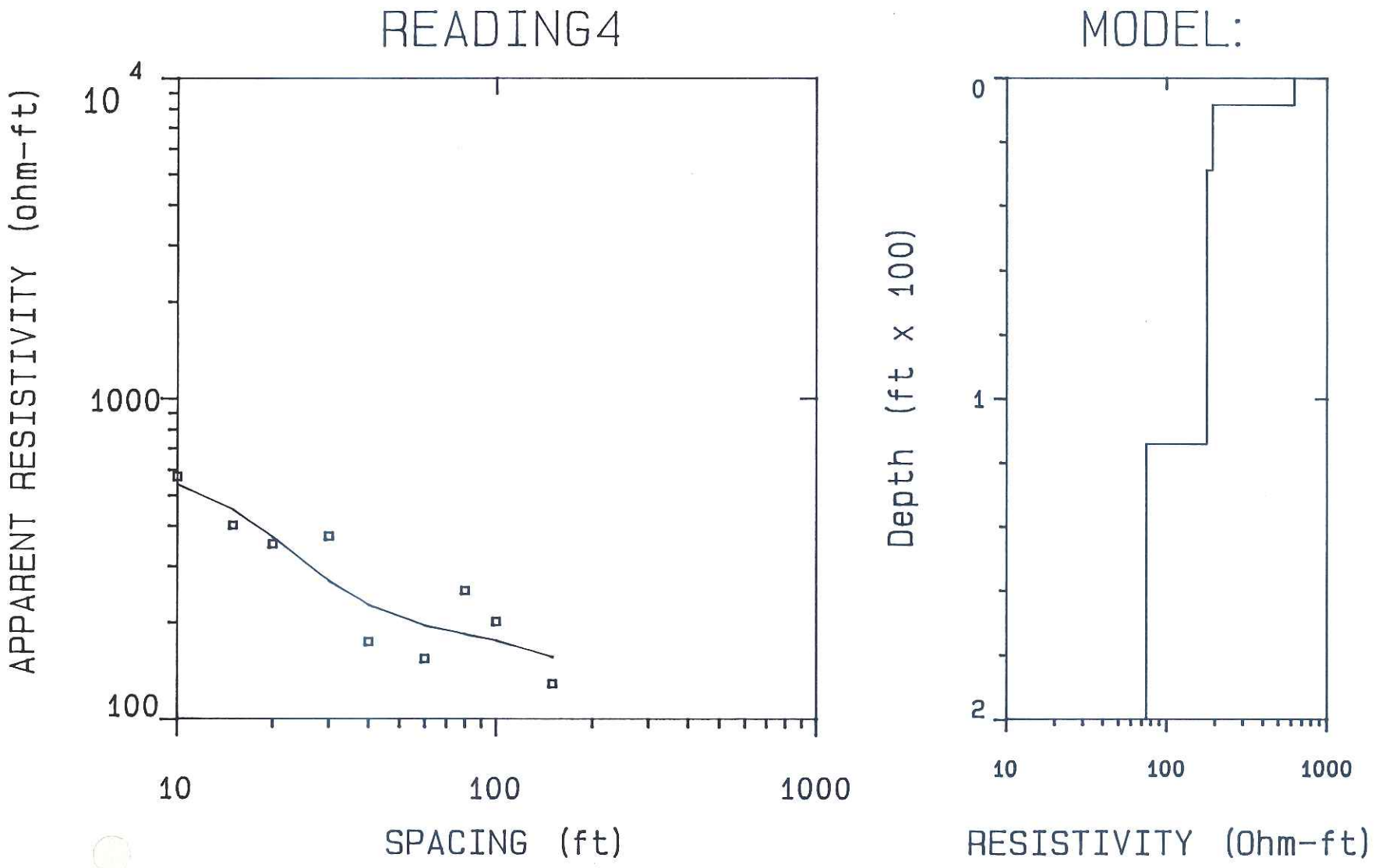
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	622.1	8.46	-8.46	0.0136	5267.4
2	192.3	20.52	-28.98	0.106	3946.7
3	176.9	85.06	-114.0	0.480	15054.3
4	74.32				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	573.0	542.5	5.30
2	15.00	401.0	448.9	-11.94
3	20.00	350.0	367.0	-4.88
4	30.00	371.0	268.4	27.63
5	40.00	174.0	224.9	-29.28
6	60.00	154.0	194.6	-26.36
7	80.00	251.0	183.1	27.02
8	100.0	201.0	174.9	12.96
9	150.0	129.0	155.3	-20.40

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.82						
P 2	-0.06	0.67					
P 3	0.00	0.11	0.84				
P 4	0.00	-0.04	0.09	0.04			
T 1	0.18	0.27	-0.06	0.02	0.59		
T 2	-0.01	0.06	0.10	0.00	-0.01	0.02	
T 3	0.00	-0.05	0.13	0.05	0.02	0.00	0.06
	P 1	P 2	P 3	P 4	T 1	T 2	T 3


READING4
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 100)
0
1
2
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: READINGS

CLIENT: general electric
LOCATION: reading rd. landfill
COUNTY: O
PROJECT: ge-evendale rfi
ELEVATION: 0.00

DATE: 1991
SOUNDING: O
AZIMUTH: n-s
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 9.887 PERCENT

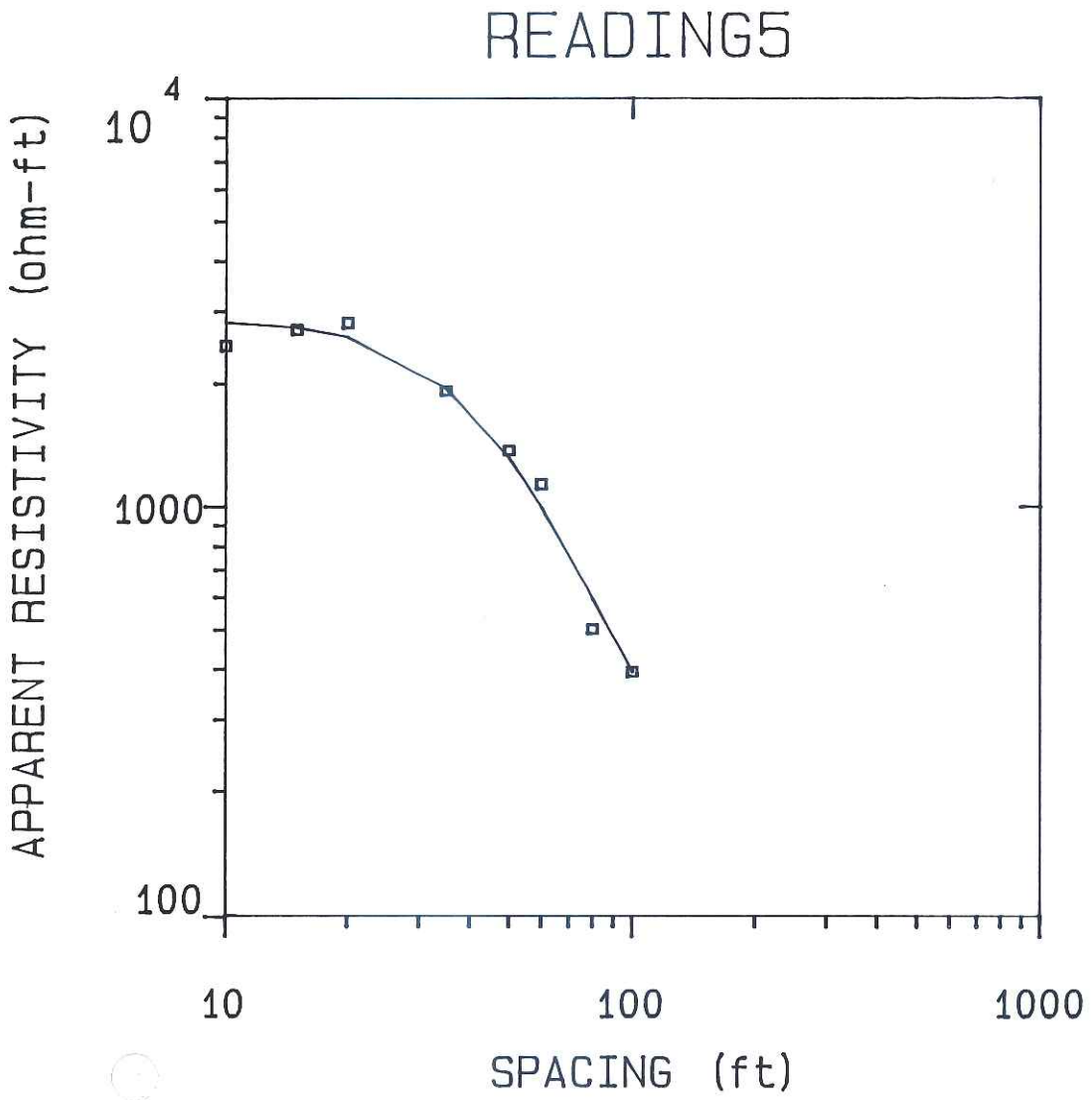
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	2869.3	20.83	-20.83	0.00726	59790.6
2	671.3	16.73	-37.57	0.0249	11237.9
3	196.9				

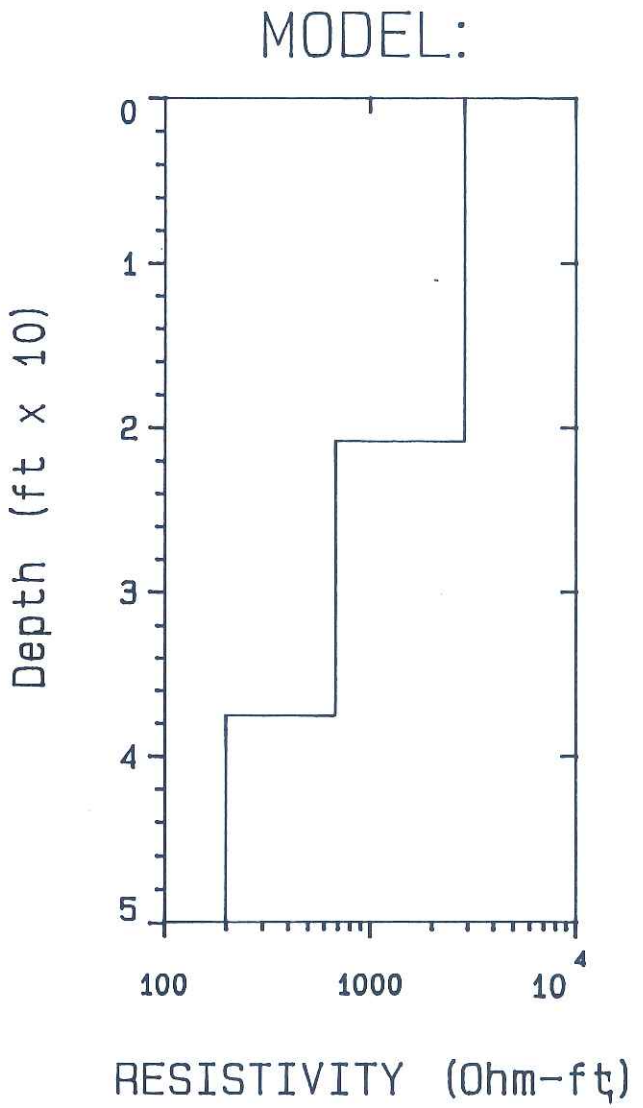
ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	2477.0	2819.5	-13.83
2	15.00	2708.0	2728.9	-0.774
3	20.00	2815.0	2584.7	8.18
4	35.00	1918.0	1936.4	-0.963
5	50.00	1372.0	1307.0	4.73
6	60.00	1130.0	992.1	12.20
7	80.00	502.0	592.7	-18.07
8	100.0	393.0	393.4	-0.126

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.91				
P 2	-0.01	0.06			
P 3	-0.05	0.06	0.29		
T 1	0.05	0.21	0.12	0.85	
T 2	-0.03	0.05	0.15	0.13	0.08
	P 1	P 2	P 3	T 1	T 2


READINGS
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)


MODEL:
Depth (ft x 10)
0
1
2
3
4
5
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: READING6

CLIENT: GENERAL ELECTRIC
LOCATION: READING RD. LANDFILL
COUNTY: O
PROJECT: GE-EVENDALE RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: O
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 18.529 PERCENT

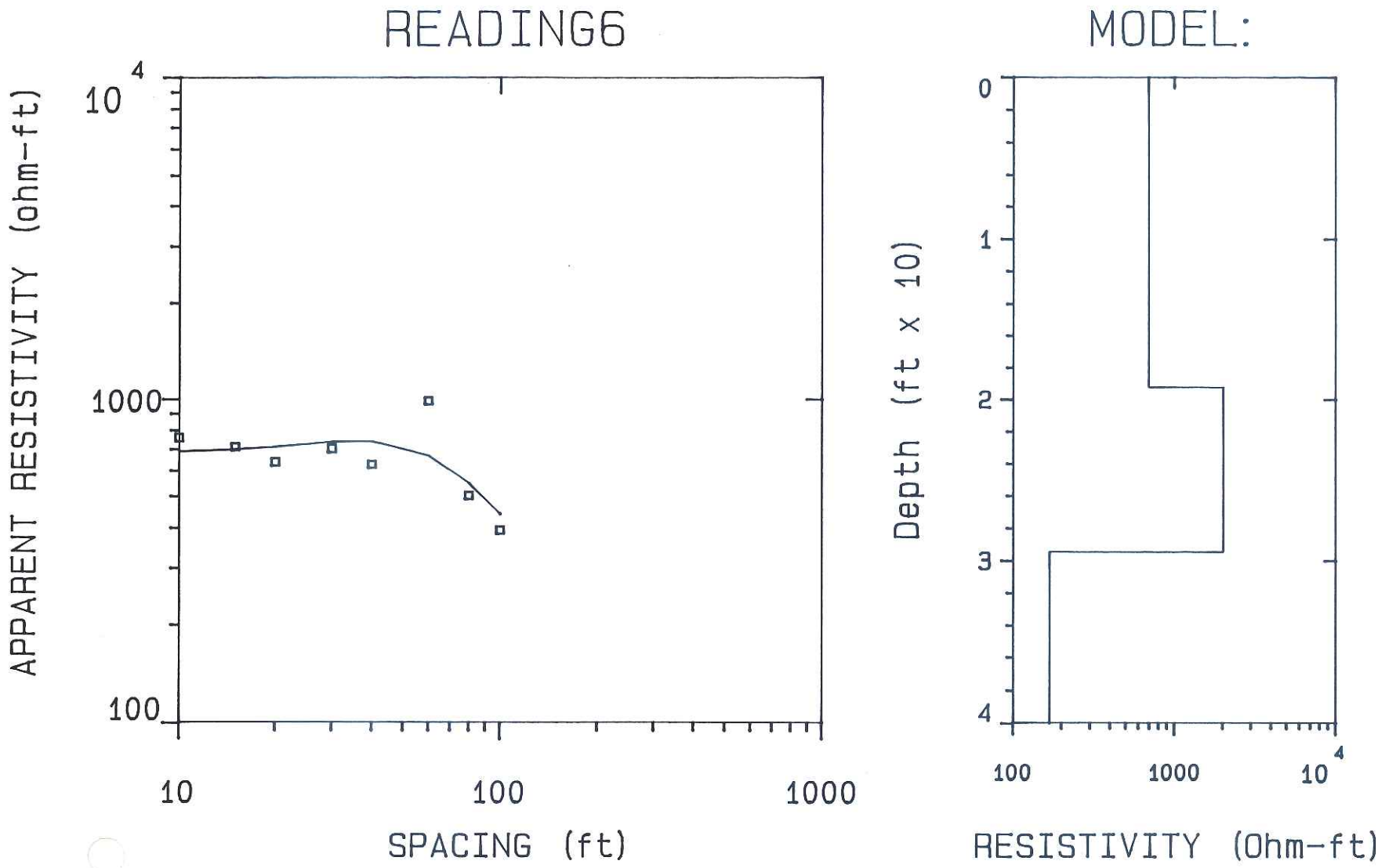
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	685.7	19.27	-19.27	0.0281	13215.2
2	2006.1	10.20	-29.47	0.00508	20463.3
3	167.8				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	762.0	690.8	9.33
2	15.00	712.0	700.7	1.58
3	20.00	638.0	714.3	-11.96
4	30.00	704.0	740.7	-5.22
5	40.00	627.0	742.2	-18.38
6	60.00	989.0	664.9	32.76
7	80.00	502.0	546.5	-8.88
8	100.0	392.0	438.7	-11.91

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	T 1	T 2
P 1	0.95				
P 2	0.04	0.42			
P 3	0.00	0.18	0.16		
T 1	-0.09	0.06	0.17	0.40	
T 2	0.02	0.39	0.19	0.11	0.36


READING6
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 10)
0
1
2
3
4
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: READING7

CLIENT: GENERAL ELECTRIC
LOCATION: READING RD. LANDFILL
COUNTY: 0
PROJECT: GE-EVENDALE RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 27.739 PERCENT

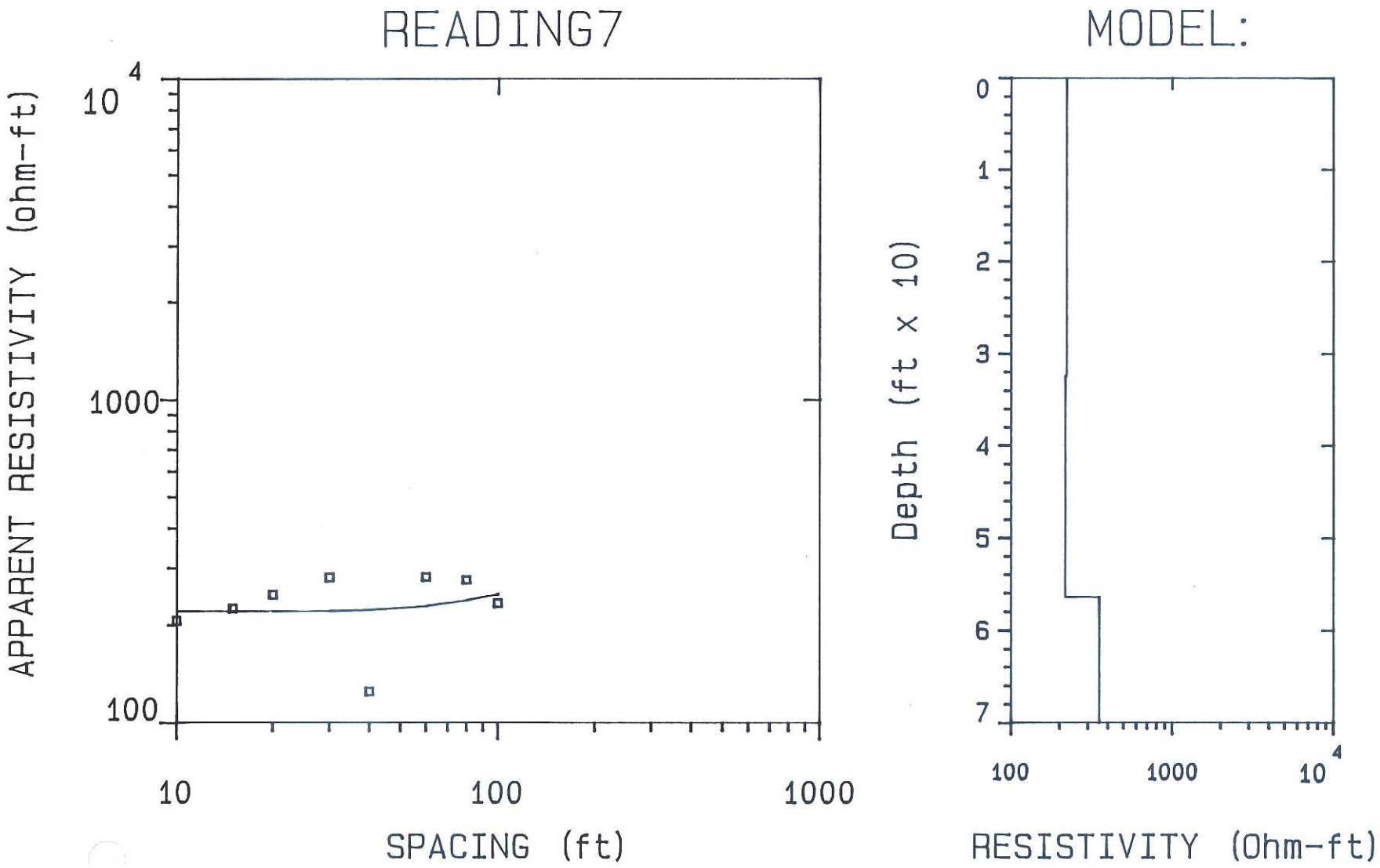
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	219.8	32.44	-32.44	0.147	7132.9
2	215.5	23.98	-56.43	0.111	5170.5
3	352.4				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	207.0	220.2	-6.38
2	15.00	226.0	220.3	2.52
3	20.00	249.0	220.5	11.42
4	30.00	281.0	221.6	21.13
5	40.00	125.0	223.4	-78.76
6	60.00	282.0	229.8	18.48
7	80.00	276.0	239.2	13.31
8	100.0	234.0	249.8	-6.79

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.97				
P 2	0.04	0.43			
P 3	0.01	0.28	0.23		
T 1	0.01	-0.02	-0.04	0.02	
T 2	-0.01	-0.14	-0.10	0.02	0.05
	P 1	P 2	P 3	T 1	T 2


READING7
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 10)
0
1
2
3
4
5
6
7
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: READING8

CLIENT: GENERAL ELECTRIC
LOCATION: READING RD. LANDFILL
COUNTY: 0
PROJECT: GE-EVENDALE RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 19.026 PERCENT

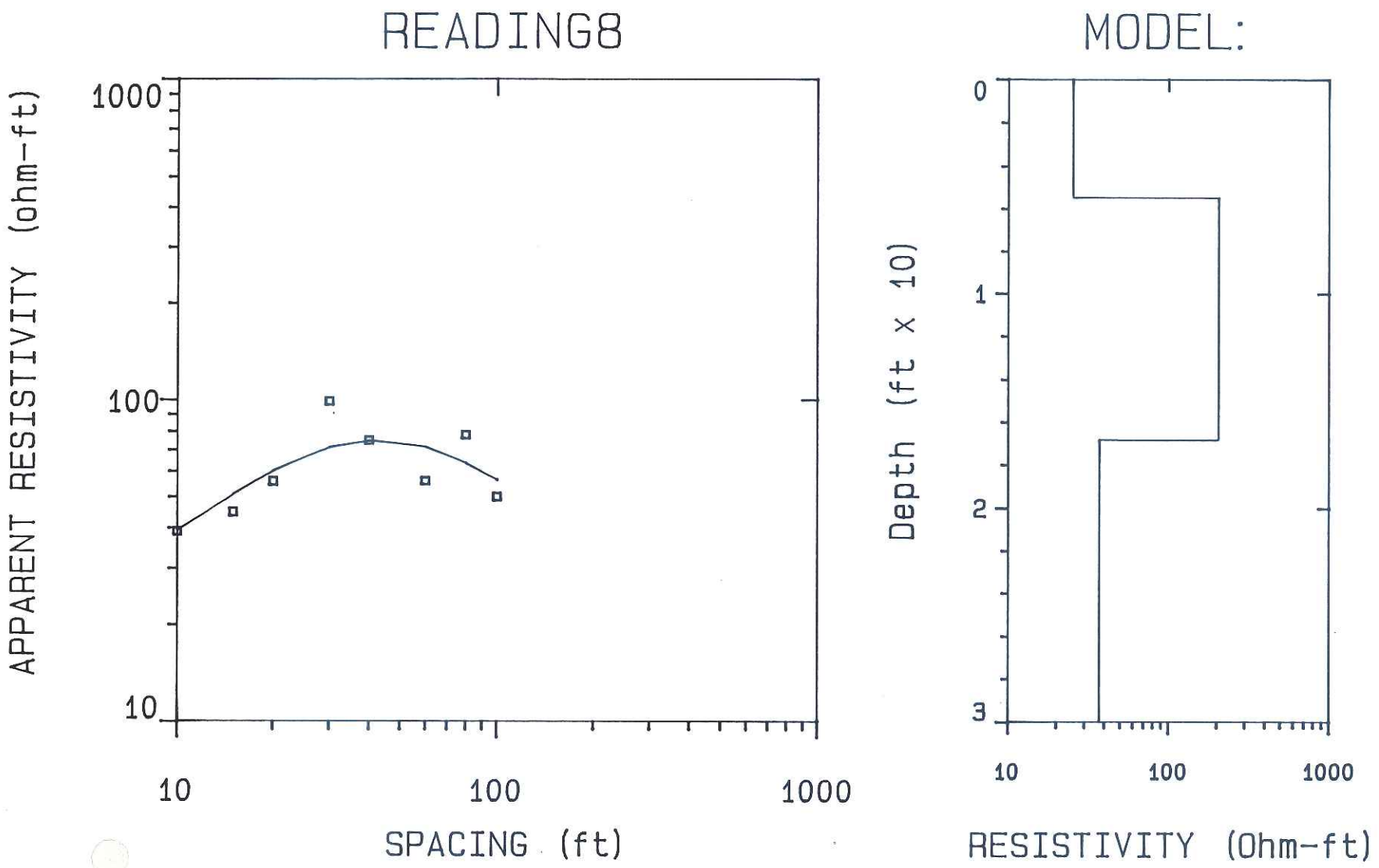
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	25.16	5.50	-5.50	0.218	138.5
2	204.5	11.32	-16.83	0.0553	2317.4
3	36.78				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	39.00	39.21	-0.559
2	15.00	45.00	51.02	-13.38
3	20.00	56.00	60.37	-7.81
4	30.00	99.00	71.46	27.81
5	40.00	75.00	75.08	-0.112
6	60.00	56.00	71.30	-27.32
7	80.00	78.00	63.35	18.77
8	100.0	50.00	56.13	-12.27

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	T 1	T 2
P 1	0.89				
P 2	-0.06	0.60			
P 3	0.03	-0.01	0.95		
T 1	-0.14	-0.13	0.04	0.81	
T 2	0.03	0.45	0.07	0.10	0.42


READING8
APPARENT RESISTIVITY (ohm-ft)
1000
100
10
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 10)
0
1
2
3
10
100
1000
RESISTIVITY (Ohm-ft)

DATA SET: READING9

CLIENT: GENERAL ELECTRIC
LOCATION: READING RD. LANDFILL
COUNTY: 0
PROJECT: GE-EVENDALE RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 179.040 PERCENT

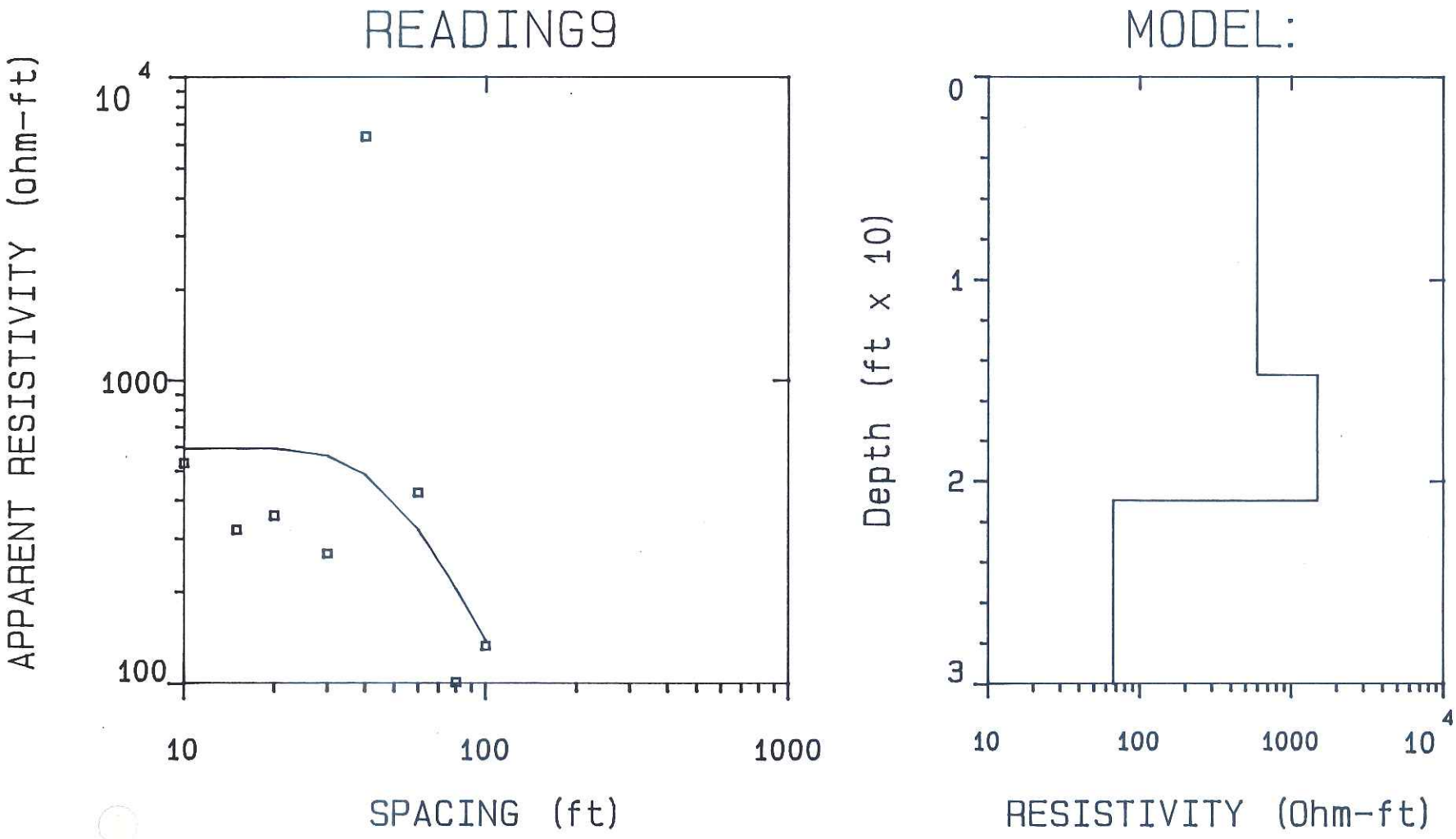
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	590.4	14.73	-14.73	0.0249	8699.7
2	1486.3	6.24	-20.98	0.00420	9286.9
3	66.57				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	532.0	593.1	-11.49
2	15.00	321.0	595.5	-85.51
3	20.00	358.0	594.3	-66.02
4	30.00	267.0	558.8	-109.3
5	40.00	6392.0	484.8	92.41
6	60.00	424.0	320.1	24.49
7	80.00	101.0	204.2	-102.2
8	100.0	133.0	138.2	-3.97

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	T 1	T 2
P 1	0.23				
P 2	0.03	0.11			
P 3	-0.01	0.06	0.04		
T 1	-0.02	0.12	0.07	0.15	
T 2	0.02	0.11	0.06	0.13	0.11


READING9
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
1000
SPACING (ft)
MODEL:
Depth (ft x 10)
0
1
2
3
10
100
1000
10 4
RESISTIVITY (Ohm-ft)

DATA SET: READTEN

CLIENT: GENERAL ELECTRIC
LOCATION: READING RD. LANDFILL
COUNTY: 0
PROJECT: GE-EVENDALE RFI
ELEVATION: 0.00

DATE: 1991
SOUNDING: 0
AZIMUTH: N-S
EQUIPMENT: Synthetic

Schlumberger Configuration

FITTING ERROR: 85.509 PERCENT

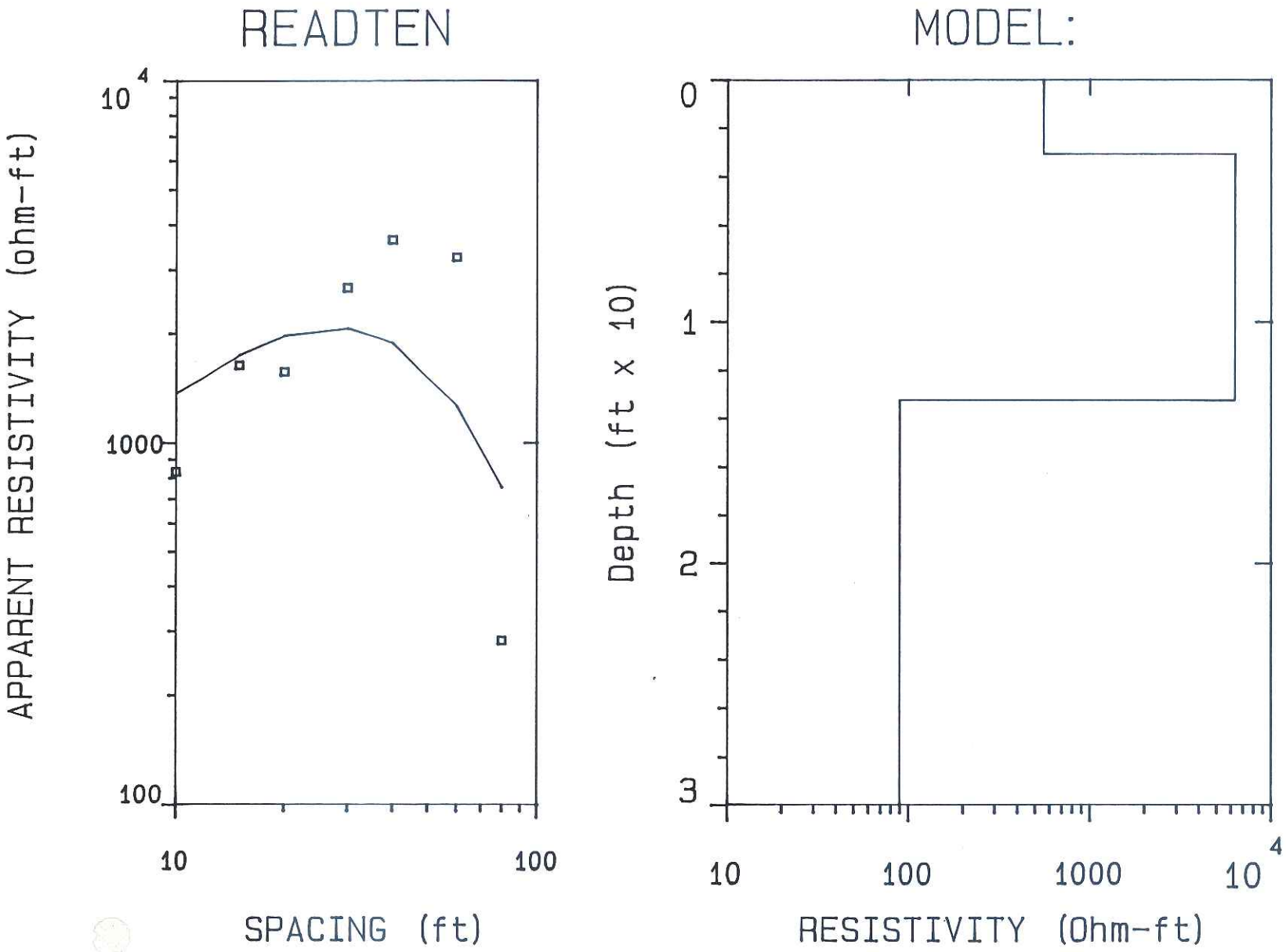
L #	RESISTIVITY (ohm-ft)	THICKNESS (feet)	ELEVATION (feet)	CONDUCTANCE (Siemens)	RESISTANCE (Ohms)
			0.0		
1	550.3	3.09	-3.09	0.00563	1705.0
2	6302.4	10.18	-13.27	0.00162	64160.9
3	89.00				

ALL PARAMETERS ARE FREE

No.	SPACING (ft)	RHO-A (ohm-ft) DATA	RHO-A (ohm-ft) SYNTHETIC	DIFFERENCE (percent)
1	10.00	833.0	1364.7	-63.83
2	15.00	1640.0	1747.9	-6.57
3	20.00	1571.0	1973.9	-25.64
4	30.00	2674.0	2068.5	22.64
5	40.00	3635.0	1874.6	48.42
6	60.00	3248.0	1255.8	61.33
7	80.00	282.0	753.3	-167.1

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.48				
P 2	0.04	0.50			
P 3	-0.01	0.04	0.01		
T 1	-0.47	-0.04	0.01	0.46	
T 2	-0.04	0.48	0.04	0.04	0.48
	P 1	P 2	P 3	T 1	T 2


READTEN
APPARENT RESISTIVITY (ohm-ft)
10 4
1000
100
10
100
SPACING (ft)
MODEL:
Depth (ft x 10)
0
1
2
3
10
100
1000
10 4
RESISTIVITY (Ohm-ft)